



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 10, 2007

CERTIFIED MAIL 7006 0810 0005 9535 5464 RETURN RECEIPT REQUESTED

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

This letter relates to our July 11th conference call, specifically to the four additional UIC related items we discussed which were not the subject of your letter and which are not discussed in Miguel Flores' letter of response dated July 23, 2007. Those items were: training, RBDMS funding, Class V and Class II program revisions.

When asked what you saw as areas that EPA may be able to assist your program, you mentioned staff training, especially for new inspectors. As we mentioned, we have requested the National UIC Inspector Training Course for 2008 be held in Dallas. Also, two of our staff have given a course called "Nuts and Bolts of Falloff Testing" to other state and federal UIC programs, with some tailoring to the specific needs of the particular audience. That could be arranged for OCC, at your request, or OCC could write a special project grant proposal to Region 6. Another option is to work through the GWPC, as other state programs are facing the same issues.

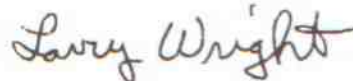
The second point you mentioned was related to financing the conversion from OCC's current well database system to RBDMS, as there are potential GWPC budget issues. There are two possibilities OCC can pursue: a grant through the EPA Network Exchange Grant program, (details forwarded to Charles Lord via e-mail on July 12th), and/or through a special project grant proposal.

The third point discussed was the Class V program revision status. You said there were changes in the legal and UIC departments at OCC since the first response was written. In addition, there are staff changes at ODEQ, and it would be necessary to get momentum going again at both agencies. You also mentioned working towards completion of the program revision by April 1, 2008, for a submission to the legislature. In the meantime, Tim Baker was tasked with setting up a joint meeting between OCC, DEQ and EPA to establish a realistic timetable and goals. It was our understanding that the meeting would be arranged within a few weeks after the conference call.

The fourth point discussed was the Class II program revision response to EPA's questions. It is our understanding that OCC's proposed response has lain dormant and will need to be revisited and rewritten with the current staff's input. OCC will review their draft and provide EPA with a timeframe in which we could expect to receive a response. It was stated that it might take about a month after the conference call to be able to estimate the timing.

Please let me know if you have any questions or comments regarding our understanding of the four items discussed during the July 11th conference call. I look forward to working with OCC on moving these UIC-related issues forward.

Sincerely yours,

A handwritten signature in cursive script that reads "Larry Wright".

Larry D. Wright
Chief
Source Water Protection Branch

cc: Tim Baker, OCC Pollution Abatement Manager
Charles Lord, OCC UIC Manager

OKLAHOMA

Corporation Commission

P.O. BOX 52000

OKLAHOMA CITY OKLAHOMA 73152-2000

OIL & GAS CONSERVATION DIVISION

May 25, 2007

Mr. Miguel I. Flores, Director
Water Quality Protection Division
Region 6
United States Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Mr. Flores:

I have received your office's evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2006 (FY06), which ended on June 30, 2006. The report notes several tasks that need attention, and we are committed to completing those tasks as soon as possible. I feel compelled, however, to address one paragraph of the transmittal letter immediately. This paragraph reads:

"This year's report does not make particular recommendations, but does highlight areas of concern with the enforcement program. For example, 24 reports of brine or brackish water purging to surface were associated with injection wells or waterflood units, yet no UIC referral or enforcement actions were noted. Additionally, mandatory maximum mileage limits were imposed on all OCC staff, including inspectors. We are concerned this change weakens the OCC surveillance program, which already is stretched thin."

I suspect this paragraph reflects some simple misunderstandings, but I worry it might mislead others who have no interest in delving deeper into the facts or gaining a fuller understanding of the issues. This paragraph should be retracted or clarified for several reasons.

First, the paragraph refers to 24 reports of brine or brackish water purging to surface associated with injection wells or waterflood units. It implies that no referral or enforcement actions were documented. In fact, a careful review of our files reveals that not all of these reported incidents were purges and not all were associated with injection operations, but that OCC took appropriate action in response to each. The 24 reports, which span the years from 2003 to 2006, break down this way:

- Two involved leaking wellheads, one on an injection well and the other on a producing well. Both were promptly fixed.
- One involved a complaint of contamination; however, sampling in response to the complaint found no contamination.
- Three involved seeps in areas of historical oil and gas activities; however, sampling found no contamination at or above action levels.

Following:

Miguel
Bill

255 Jim Thorpe Building

Telephone: (405)521-2302

FAX: (405)521-3099



Lori Wrotenberry, Director

RECEIVED
EPA-600-DIR OFC
07 MAY 29 PM 6:26

- One involved a natural brine seep, as indicated by a Stiff diagram.
- In response to three of the reports, our Field Operations Department took appropriate enforcement action by requiring the operator to plug a purging well.
- Nine reports, some of which involved purging wells, were addressed through a cooperative effort between the Field Operations Department, the Pollution Abatement Department (including the UIC Section), and the operator. All have been resolved through appropriate enforcement action. Please note that seven of these reports occurred in one particular 640-acre section of southeast Oklahoma. Also, one of these reports was counted as three reports, but we have been unable to discern an explanation from your staff's notes.
- Two appear to be duplications as noted above.
- Two remain under investigation by the Pollution Abatement Department.
- One is currently pending in OCC's administrative court system.

Contrary to the implication of the transmittal letter, OCC has responded to all 24 (apparently 22) reports by investigating the complaint or discovery, and has taken appropriate enforcement action to correct any violations. All but three of the reported complaints or incidents have already been resolved. Two are still under investigation, and another has been docketed for hearing.

Second, the paragraph goes on to assert that OCC has imposed "mandatory maximum mileage limits" on all staff, including inspectors. While this statement has some basis in fact, it does not accurately describe the management controls that have been instituted. The expressed concern about an adverse impact on the UIC program is entirely unsubstantiated.

Here's the truth. In FY07, not FY06, OCC has had to take extra measures to control its expenditures on transportation. The need for these controls arose for several reasons, but principally because the cost of gasoline has risen to historic levels. I trust you understand the challenges of managing record gasoline prices on a tight budget, a situation that is aggravated by the continuing reductions in the EPA grant supporting the UIC program. In order to meet these challenges, OCC has established a monthly mileage limit of 1600 miles, which an inspector may not exceed without authorization from the district manager. The district manager has discretion to authorize additional mileage in emergencies or other special situations.

It is not true that there has been or will be any significant adverse effect on the UIC program from these mileage controls. OCC continues to give priority to UIC inspections as reflected in the numbers reported to EPA on Form 7520. These numbers continue to meet or exceed work plan targets.

Furthermore, OCC continues to manage its operations to maximize the presence of its inspectors in the field. Unlike their counterparts in other states in EPA Region VI, all OCC field inspectors live and work in the immediate vicinity of their assigned territories. In fact, throughout most of the State of Oklahoma, OCC has an oil and gas field inspector living within 30 minutes of each oil and gas producing or injection well. The only exceptions occur in far northwest Oklahoma, where we have four inspectors, and in the area assigned to one inspector in southeast Oklahoma. In these remote areas the response time to some wells is 30 minutes to an hour longer. Among other benefits, this deployment of the field inspectors enables them to cover more of their territories with less mileage and therefore mitigates the impact of mileage limits.

While speculating about a possible weakening of OCC's surveillance program due to mileage controls, your office's evaluation fails to acknowledge that several recent developments are combining to strengthen OCC's surveillance program tremendously. Over the last several years, the number of field inspectors has grown from 49 to 58, an increase of 18%. I believe the current ratios of field inspectors to wells and field inspectors to office staff compare favorably to those in other states in Region VI. OCC has also increased the efficiency of the field inspectors by equipping them with laptop computers and wireless Internet connections. Please note that we remain extremely grateful to EPA for providing funding assistance needed to purchase the laptop computers. With these computers, the inspectors access a wide range of information on the operations in their areas and complete and file their reports electronically. Both of these capabilities enable the inspectors to accomplish more during each and every workday.

Finally, though your transmittal letter does not offer any particular recommendations, it alludes to other "areas of concern" with our enforcement program. Searching through the report attached to your letter in an attempt to understand the concerns, I find even more examples of erroneous statements and unfounded assertions about our enforcement program. The enforcement program at the OCC is well established and contains numerous procedures designed to ensure fairness and consistency and to obtain the desired results. We will be happy to walk you through those procedures at any time so you may judge for yourself.

The comments about our enforcement program suggest to me that we need to meet to review the basis for your concerns and attempt to formulate a plan of action to resolve them. I will be happy to host such a meeting here in Oklahoma City. Please let me know when you will be available to participate in this meeting, as you will be a necessary party to the discussion. Because of the potentially prejudicial effect of the comments on our UIC program, the sooner we can schedule this meeting, the better.

Sincerely,


Lori Wrotenbery, Director
Oil and Gas Conservation Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JUL 23 2007

CERTIFIED MAIL 7004 1160 0003 0352 7191

RETURN RECEIPT REQUESTED

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

This letter both responds to your May 25, 2007, letter that expressed concerns about some issues covered in our FY06 End-of-Year evaluation of your agency's Underground Injection Control (UIC) Primacy Program, and discusses our related July 11th conference call. I am glad we had the call and believe it provided good discussion on various UIC program issues.

With respect to your concerns relating to cases of water purging to the surface, our information was gathered during file reviews conducted in your agency's district offices. Our statement that "no UIC referral or enforcement actions were noted for these purges" was not intended to allege none were taken, but simply indicated no documentation existed in the reviewed files that indicated the purge details were passed on to the UIC office in Oklahoma City. Your letter detailed follow-up actions taken for most of these purges. Taken together, the file review and your program's additional actions indicate that perhaps it isn't always possible to follow the program's enforcement processes from district office files. The proposed changes with the new database you mentioned should help alleviate these documentation difficulties in the future.

Regarding our concern about mileage limitations imposed on field inspectors, we understand the increasing cost of gasoline is a significant budget concern. Unfortunately, increasing operator fees to cover the increased costs is not a solution to this problem because of Oklahoma's financial procedures. We also share your concern about the level of EPA funding of the UIC program and have communicated this concern to our EPA Headquarters office for several years. Your letter states that OCC recently hired more field inspectors, and we commend you for that action to enhance your agency's surveillance activities. We were unaware of the additional inspectors prior to your letter.


To reiterate, our End-of-Year evaluation process fulfills our oversight responsibility under the UIC program of the Safe Drinking Water Act, including providing feedback on positive aspects of program implementation and recommending specific improvements to State UIC program performance. Our annual evaluation process includes input from the State agency on the draft version of our End-of-Year report. I understand that my staff provided a draft version of our FY06 evaluation to your staff for comment prior to transmitting the final report. The transmittal letter for our final report typically includes significant issues to highlight the importance of those issues.

Both your May 25th letter and this response will be included in our formal records as part of this year's End-of-Year review. I want to thank you and your staff for the work that is done by OCC to protect water resources in Oklahoma. I consider our open dialogue a key component of effective communication between our agencies. I look forward to continued communication on ways EPA can assist OCC in implementing the UIC program.

Sincerely yours,



Miguel I. Flores



Director

Water Quality Protection Division

cc: Tim Baker, OCC Manager Pollution Abatement
Charles Lord, OCC UIC Manager

September 5, 1986

MEMORANDUM

MEMORANDUM

SUBJECT: Status of Oklahoma Corporation Commission's (OCC) UIC Program

FROM: Myron O. Knudson, P.E.
Director, Water Management Division (6W)

TO: Michael B. Cook
Director, Office of Drinking Water (WH-550)

This is a status report of the OCC program from mid-year 1986 to the present. This includes recommendations from an intensive oversight review conducted in June of this year. At mid-year, the OCC was evaluated on its major program elements for the Class II UIC program. A brief summary of that evaluation by program element follows:

Permit Program

Permitting of wells continued to be a high priority. However, of major concern was the operation of injection wells into non-exempt USDW's. The OCC agreed at that time to conduct hearings and fact finding regarding this situation.

Compliance Monitoring and Enforcement

This program element was an area of major concern. It was unclear how many wells the OCC was actually responsible for (inventory). No major progress had been made on their historical search. As a result of this, the status of the major program elements, monitoring and enforcement, were uncertain. For example, the number of operators reporting, cement records reviewed and MITS on existing wells, were unclear along with the actions taken when problems were found. The status of inspections and follow-up on citizens complaints was also unclear due to an apparent lack of data from the field offices.

Public Participation

No major problems were found with this program element.

Program Administration

The major area of concern under this program element was the lack of progress with an ADP system for tracking wells. OCC's participation in the Headquarters UIC Micro Program had offered little benefits to them in establishing a workable ADP program.

SURNAME: HEAVER CABRA
DATE: 9/15
EPA 1320-1 (12/80) 2

OFFICIAL FILE COPY

HWMD for 1986-1987
• HWMD is to transmit updated copies (quarterly) of the disposal facility permitting schedule to WMD.

Based on the above results, it was determined that an intensive oversight review of the OCC program was necessary to determine progress since primary, particularly in the areas of compliance and enforcement.

The following summarizes, by program element, the results of the intensive oversight review and the recommendations given. (Attached is a copy of the oversight questions prepared for that evaluation and the responses given us by the OCC.)

Permit Program

No hearings had yet been held for any proposed aquifer exemptions. It was recommended that such actions be taken as soon as possible.

Compliance Monitoring and Enforcement

It was recommended that the basic need of the OCC was to determine their universe of wells, i.e. complete their historical search. Also, procedures needed to be developed for activities such as file reviews, citizens complaints, and coordination with the field office.

Program Administration

Concurrent with the above, development of an ADP system needed to be initiated with a private contractor.

Present Program Status

The following actions are presently underway to alleviate the deficiencies in the OCC program. Additional personnel have been placed on the historical search (inventory) for an intensified effort which should result in completion by the end of September 1986. A private contractor has been employed by OCC and much progress has been made toward implementation of a workable ADP system. As a result of data from the historical search, OCC is progressing toward completion of their MIT on existing wells within the revised time frame of August 1, 1988. File reviews will be completed at the same time. The FY 87 grant workplan prepared by OCC utilizes a milestone schedule to complete commitments on file reviews, MIT and inspections, operator reports, etc. The workplan also commits the OCC to developing procedures for inspections, citizens complaints, and coordination with field offices. As part of the workplan, commitments have been made to review all areas requiring aquifer exemptions. A hearing on proposed rules for aquifer exemptions has been conducted and the first hearing on a proposed exemption will be held by January 31, 1987.

A detailed report will be prepared for the OCC at the end-of-year. A copy of that end-of-year report on Oklahoma will be transmitted as a follow-up to this report.

Attachment

bcc: Jack Davidson - OCC
Tim Baker - OCC

BOB ANTHONY
Commissioner

ED APPLE
Commissioner

DENISE A. BODE
Commissioner

OKLAHOMA
CORPORATION COMMISSION
P.O. BOX 52000-2000
OKLAHOMA CITY, OKLAHOMA 73152-2000

255 Jim Thorpe Building
Telephone: (405) 521-2500
FAX: (405) 522-0757

Oil & Gas Conservation Division



POLLUTION ABATEMENT
Underground Injection Control

April 2, 1998

United States Environmental Protection Agency
Region 6
Mike Frazier
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RECEIVED
SOURCE WATER
PROTECTION DIVISION
6/10/98
APR - 7 AM '98

Dear Mr. Frazier:

Please find enclosed the Draft Action Plan that was developed as part of the agreement reached by Mike Battles and William Hathaway that was sent to Region 6 on March 11, 1998. If you should have any questions please call.

Sincerely,

A handwritten signature in cursive script, appearing to read "L. Fiddler".

Larry Fiddler
Manager
Underground Injection Control
Oil and Gas Conservation Division
Oklahoma Corporation Commission

DRAFT ACTION PLAN

BEFORE AUGUST 1, 1998

B. 1. During the month of April, the staff's of the OCC and EPA Region 6 will discuss the program review comments regarding the permit application process including public participation and the OCC staff will seek modification if deemed necessary.

B.2. During the month of May, the staff's of the OCC and EPA Region 6 will discuss the program review comments regarding the current plugging and abandonment requirements and forms, and procedures for testing mechanical integrity, and the OCC staff will seek modification if deemed necessary.

B.3. During the month of May, the staff's of the OCC and EPA Region 6 will discuss the program review comments regarding the current enforcement policies and procedures of the OCC. If deemed necessary the OCC will modify these policies and submit any changes to Region 6 for review. OCC will provide a list of all orders in which the OCC initiates termination proceedings as an addendum to the quarterly reports.

B.4. During the month of June, the OCC will conduct a preliminary comparison of the applicable UIC program, including the 1981 Primacy Program Description and amended General Rules of the Oil and Gas Conservation Division [OAC Title 165 Chapter 10, effective December 31, 1991], with a representative sample of concurrent orders to determine the scope of authorization which may conflict with the Federally approved State UIC program. This study will be provided to Region 6 before August 31, 1998.

B.5. During the month of June, the OCC will negotiate and finalize an enforcement agreement with Region 6 Compliance Assurance and Enforcement Division for fiscal year 1999.

B.6. During the month of April, the OCC will evaluate current staff assignments and propose a plan to address any current and/or future staffing deficiencies.

B.7. During the period between April 1st, and August 1st, the staff of EPA Region 6 will monitor the implementation of the new electronic database, and provide OCC with a written evaluation.

B.8. During the month of July, the OCC and Region 6 will cooperatively develop a draft plan to alleviate any conflicts between Federal UIC authority for Class I, III, or V injection wells delegated to the Oklahoma Department of Environmental Quality and associated State brine injection authority pursuant to the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. (Final plan due December 1, 1998)

BEFORE DECEMBER 1, 1998

C.1. Beginning in the month of August OCC will review any UIC program revisions both current and proposed, which identifies all applicable changes in OCC Rules and Regulations and State legislation exclusive of the currently approved State UIC program, including preparation of a crosswalk which compares the revisions with the current approved program. A revised Program Description, Memorandum of Agreement, and Attorney General's Statement will be submitted as necessary. Region 6 will provide guidance and assistance during this process as requested by OCC. Any approved program changes will be submitted by the Agency for incorporation by reference into 40 C.F.R. part 147.

C.2. Upon notification of Region 6 legal counsel's interpretation, OCC and Region 6 will independently evaluate and discuss the current methods used in the area of review and zone of endangering influence calculations and cooperatively develop an acceptable method equivalent to the approved program, to adequately protect underground sources of drinking water from potential contamination by underground injection.

C.3. Upon notification of Region 6 legal council's interpretation, OCC and Region 6 will begin developing the plan to alleviate any conflicts between Federal UIC authority for Class I, III, or V injection delegated to the Oklahoma Department of Environmental Quality and associated State brine injection authority pursuant to the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733

MAR 18 1998

MEMORANDUM

SUBJECT: Incorporation of OCC UIC Commitments into FY98 and FY99 Grant Workplans

FROM: Phil Dellinger, Chief *PD*
Ground Water/UIC Section (6WQ-SG)

TO: Donna Bunn, Chief
State/Tribal Programs Section (6WQ-AT)

The attached Agreement between Region 6 and the Oklahoma Corporation Commission (OCC) establishes UIC program commitments and deadlines for both agencies. The commitments in the Agreement should also be incorporated as necessary into the OCC's UIC grant workplan for FY98 and FY99. I have attached a copy of the signed final Agreement for your records.

If 6WQ-SG may provide any additional information or support toward amending the OCC's FY98 workplan or the development of their FY99 workplan, please call me at X-7165 or Mike Frazier at X-7236. *or 8324*

Attachments (1)

AGREEMENT

In September 1997, EPA Region 6 commenced an informal review of the Oklahoma Corporation Commission's (OCC's) Underground Injection Control (UIC) program. On December 16, 1997, EPA Region 6 provided OCC a preliminary assessment describing issues identified in that review. This Agreement sets forth the process and timetable the agencies will use to address those issues. References to specific provisions of the Safe Drinking Water Act (SDWA) and evaluation factors published at 46 Fed. Reg. 27333 (May 19, 1981) were used in the December 16, 1997 preliminary assessment and are repeated in brackets in this Agreement for ease of reference, e.g., [Factor 5, Sec. 1425(a), (e) item 2].

The agencies have already reached consensus on one issue [Factor 2, Sec. 1425(a), (b) item 6]. The inadequate surface casing within the 1/4 mile area of review applied by the State program during its evaluation of the Link Oil's application for the Duncan #1 (OCC order #410083) will be resolved if and when OCC provides Region 6 with copies of completion reports (OCC Form 1002A) and plugging reports (OCC Form 1003 and 1003C) showing that all wells in the area of review were properly plugged.

In order to address the remaining issues, Region 6 and OCC agree to the following timetable and commitments. These commitments will be incorporated into an amended FY98 grant workplan and future workplans as appropriate:

A. Before April 1, 1998:

1. OCC will integrate its existing electronic databases by implementing a new electronic database. This accomplishment will enhance identification of operator non-compliance with OCC regulations, especially annual reporting requirements (OCC Form 1012), and the tracking of enforcement activities. The new electronic database will also allow OCC to more adequately complete data fields for annual inventory and quarterly reports (EPA Forms 7520). [Factor 1, Sec. 1421(b)(1)(B), items 2 and 3, and Sec. 1425(a); Factor 2, Sec. 1425(a), (b) items 2, 4, 7; Factor 3, Sec. 1421(b)(1)(C), items 1 and 2, and Sec. 1425(a), (c); Factor 4, Sec. 1425(a), (d)]
2. OCC will develop a draft action plan to accomplish the program commitments listed below for August 1 and December 1, 1998. To aid in this process, Region 6 will provide guidance and assistance as requested by OCC.

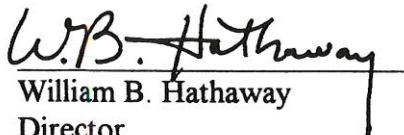
B. Before August 1, 1998:

1. OCC will review and modify, if necessary, the current UIC permit application process, including public participation, to address issues identified in the program review comments. Region 6 will provide guidance and assistance as requested by OCC.
[Factor 1, Sec. 1421(b)(1)(B), items 2 and 3, and Sec. 1425(a); Factor 5, Sec. 1425(a), (e) items 1, 2 and 3]
2. OCC will review and modify, if necessary, the current plugging and abandonment requirements, forms, and procedures for testing mechanical integrity to address concerns presented in the program review comments. Region 6 will provide guidance and assistance as requested by OCC. [Factor 2, Sec. 1425(a), (b) items 4 and 7]
3. OCC will review and, if necessary, modify the current enforcement policies and procedures to assure that all orders are enforced as written, i.e. termination. OCC will submit these changes to Region 6 for review, and as an addendum to quarterly reports, provide a list of all orders in which OCC initiates termination proceedings and/or terminates.
[Factor 1, Sec. 1421(b)(1)(A) and Sec. 1425(a)]
4. OCC will conduct a preliminary comparison of the applicable UIC program, including the 1981 Primacy Program Description and amended General Rules of the Oil and Gas Conservation Division [OAC Title 165 Chapter 10, effective December 31, 1991], with a representative sample of concurrent orders to determine the scope of authorization which may conflict with the Federally approved State UIC program. OCC will provide the results of this comparison to Region 6 before August 31, 1998.
[Factor 2, Sec. 1425(a), (b) items 2 and 3]
5. OCC will negotiate and finalize an enforcement agreement with Region 6 for fiscal year 1999. [Factor 4, Sec. 1425(a), (d)]
6. OCC will evaluate current staff assignments and propose a plan to address any current and/or future staffing deficiencies.
[Factor 3, Sec. 1421(b)(1)(C), items 1 and 2, and Sec. 1425(a); Factor 4, Sec. 1425(a), (d)]
7. Region 6 will monitor the implementation of the new electronic database, including progress in annual monitoring report compliance, and provide OCC with a written evaluation.
[Factor 3, Sec. 1421 (b)(1)(C), item 2, and Sec. 1425(a); Factor 4, Sec. 1425(a), (d)]
8. Region 6 and OCC will cooperatively develop a draft plan to alleviate any conflicts between Federal UIC authority for Class I, III, or V injection wells delegated to the Oklahoma Department of Environmental Quality and associated State brine injection authority pursuant to the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. (Final, December 1, 1998; see item C,3)

C. Before December 1, 1998:

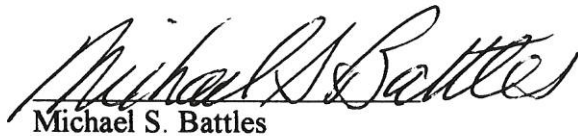
1. OCC will submit to Region 6 any UIC program revisions, both current and proposed, which identifies all applicable changes in OCC Rules and Regulations and State legislation exclusive of the currently approved State UIC program, including a crosswalk which compares the revisions with the current approved program. A revised Program Description, Memorandum of Agreement, and Attorney General's Statement will be submitted as necessary. Region 6 will provide guidance and assistance during this process as requested by OCC. Any approved program changes will be submitted by the Agency for incorporation by reference into 40 C.F.R. part 147.
2. Region 6 and OCC will independently evaluate the current methods used in the area of review and zone of endangering influence calculations and cooperatively develop an acceptable method, equivalent to the approved program, to adequately protect underground sources of drinking water from potential contamination by underground injection. [Factor 2, Sec. 1425(b), item 5]
3. Region 6 and OCC will finalize the plan to alleviate any conflicts between Federal UIC authority for Class I, III, or V injection delegated to the Oklahoma Department of Environmental Quality and associated State brine injection authority pursuant to the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. (see item B,8)

APPROVALS:


William B. Hathaway
Director

Water Quality Protection Division
Environmental Protection Agency, Region 6

2/24/98
Date


Michael S. Battles
Director

Oil and Gas Conservation Division
Oklahoma Corporation Commission

3-2-98
Date



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JAN 30 1995

MEMORANDUM

SUBJECT: Request for Clarification of the 1995 Approved Revisions of the Class II State UIC Program of the Oklahoma Corporation Commission

FROM: Larry Wright, Chief *Larry R. Wright*
Source Water Protection Branch (6WQ-S)

TO: Lawrence E. Starfield
Regional Counsel (6RC)

During the recent 6WQ review of the approved Class II Underground Injection Control (UIC) program of the Oklahoma Corporation Commission (OCC), UIC oversight personnel have identified a potential problem between the radius of the Area of Review (AOR) currently used in OCC's injection well application process and the AOR radius approved as part of OCC's applicable State UIC program. The AOR is used to identify wells which may penetrate the injection zone of a proposed injection well. If wells exist within the AOR which may act as conduits for fluids to migrate from the injection zone into an underground source of drinking water (USDW), i.e., artificial penetration (AP), the operator is required to address any AP within the AOR to assure the protection of any USDW.

The 1981 Primacy Program Description of OCC's Class II program, states that "each application for an enhanced recovery injection or disposal well must contain a plat showing the location and depth of all abandoned, producing, drilling wells or dry holes within a one-half (½) mile radius of the proposed injection well." The ½ mile AOR was further identified in OCC Rule 3-304(b)(1). Since 1981, Rule 3-304 was later transformed into Rule 8, OCC's Rules of Practice. After many further revisions, the Rules of Practice are currently codified in the Oklahoma Administrative Code (OAC) as Title 165, Chapter 5. In 1991, the Rules of Practice were apparently revised to reduce the ½ mile AOR radius to ¼ mile radius.

In 1995, the Agency approved program revisions in OCC's UIC program which included the "Recodification of the General Rules of the Oil and Gas Conservation Division into the OAC Title 165 Chapter 10 effective December 31, 1991." The revisions were approved as non-substantial changes in a letter from the then Acting Regional Administrator to Oklahoma's Governor Keating dated July 28, 1995. After reviewing the non-substantial program revisions of

1995 and associated records, UIC program oversight personnel have concluded that only the OCC's General Rules of the Oil and Gas Conservation Division [OAC 165:10] were submitted, reviewed, and approved during the most recent program revision process. Apparently, OCC's Rules of Practice [OAC 165:5] were not submitted or reviewed for approval since no record exists in the crosswalks developed during the approval process. Further complicating our efforts to interpret the issue, the UIC oversight program has experienced staff turnover which has limited our institutional knowledge. Apparently, no record exists to indicate that the Agency was aware of the AOR reduction in OCC's rules. Therefore, a question exists as whether the Agency approved the reduction of the ½ mile AOR radius to ¼ mile by its approval of OAC 165:10.

OAC 165:10-5-5(a) states "Each application for approval of a well for use as an injection well or disposal well shall be filed in accordance with 165:5-7-27." OAC 165:5-7-27(b) states "The application for the approval of an enhanced recovery injection or disposal well or wells shall be accompanied by: (1) Plat. (A) Noncommercial. A plat showing the location and total depth of the well or wells and each abandoned, producing or drilling well, and dry hole within one-quarter (¼) mile of the enhanced recovery injection well or disposal well, and identifying the surface owner of the land on which the enhanced recovery injection well or disposal well is to be located, and each operator of a producing leasehold within one-quarter (¼) mile of each enhance recovery injection or disposal well." The AOR radius for Class II commercial disposal wells currently remains at ½ mile [OAC 165:5-7-27(b)(1)(B)].

In its January 15, 1998, response to review comments, OCC contends that "the Rules of Practice 165:5-7-27 have been approved by reference by the EPA's acceptance of Rule 165:10-5-5(a) of the OCC's General Regulations, therefore the ¼ mile AOR applies to all non-commercial disposal wells and injection wells." If in fact the Agency did approve reducing the ½ mile AOR radius to ¼ mile, the change should have most likely been considered a substantial change rather than non-substantial.

So that we may reach a conclusion with OCC on this issue, I am requesting a legal interpretation of whether the Region approved a change in the AOR radius as a non-substantial program change in its letter of 1995. During discussions with attorney Robyn Moore (6RC-C) concerning the Oklahoma Department of Environmental Quality Class V authority issue, my staff previously brought this new issue to Ms. Moore's attention. The applicable documentation has also been provided.

If you have any questions, please contact me at X-7150, or Phil Dellinger at X-7165.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

May 15, 1998

MEMORANDUM

SUBJECT: Request for Clarification of the 1995 Approved Revisions of the Class II State
UIC Program of the Oklahoma Corporation Commission

FROM: Robyn Moore *RM*
Assistant Regional Counsel (6RC-C)

THROUGH: Lawrence Starfield *[Signature]*
Regional Counsel (6RC)

TO: Larry Wright
Source Water Protection Branch (6WQ-S)

This memorandum responds to your request for clarification of the Oklahoma Corporation Commission's (OCC) interpretation that EPA has approved a 1/4 mile area of review (AOR) for Class II injection wells.

Answer

OCC's approved Program identifies a 1/2 mile AOR for all Class II injection wells. EPA's 1995 approval specifically includes only Oklahoma's Chapter 10 oil and gas regulations effective on December 31, 1991. The operator application requirements at Oklahoma Administrative Code (OAC) 165:5 were not submitted as part of OCC's program revision package and are not included in the agency's 1995 approval letter. Furthermore, a letter from OCC's Tim Baker to EPA Region 6 indicated the AOR reduction to 1/4 mile for Class II injection was not promulgated until February 1992, well after the effective date of the approved 1991 regulations. Since the reduction of the AOR requirement for non-commercial injection was not submitted with or included in the program revision approved in 1995, the change was not approved by EPA Region 6. Therefore, the approved AOR for Class II injection in Oklahoma remains at 1/2 mile. In order to revise the AOR in the approved UIC program, a new UIC program submission would be necessary.

Discussion

Since obtaining UIC Primacy, OCC revised its oil and gas regulations effective December

31, 1991, as authorized at OAC Title 165, Chapter 10. In a July 29, 1995 letter to Governor Keating, EPA Region 6 approved the program revisions of the Chapter 10 oil and gas rules as a nonsubstantial program revision. The scope of the Region's approval included only the Chapter 10 revisions which were effective on December 31, 1991. The ½ mile AOR required for Class II wells is not affected and remains unchanged from the approved Program. Oklahoma's AOR requirements for Class II wells are codified separately in OCC's rules of practice at OAC 165:5. The regulation containing the AOR provision was cross-referenced in the approved Chapter 10 rules.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JAN 11 1990

CERTIFIED MAIL P 004 765 293

RETURN RECEIPT REQUESTED

Mr. Michael S. Battles
Director, Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, Oklahoma 73152-2000

Dear Mr. Battles:

The recent reviews of Oklahoma's Underground Injection Control (UIC) programs have identified several statutory changes in the Class II program administered by the Oklahoma Corporation Commission (OCC) and in the Class I, III, and V program administered by the Oklahoma Department of Environmental Quality (ODEQ). Both agencies were authorized by EPA to administer federally-approved UIC programs. OCC was given primary enforcement responsibility (primacy) for Class II wells in 1981 (40 CFR 147.1851). Oklahoma State Department of Health, predecessor to ODEQ, was given primacy for Class I, III, IV, and V wells in 1982 (40 CFR 147.1850).

The OCC has recently submitted a draft program revision to the Region to address changes in its Class II UIC program authorized under section 1425 of the Safe Drinking Water Act (SDWA). However, UIC authority granted to both State agencies by the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993 appears to conflict with the Federally approved State UIC program previously authorized under SDWA section 1422. In many instances, changes in state laws are developed without considering the corresponding Federal authorities granted to state agencies. These two Oklahoma laws have not been previously reviewed by the Agency or approved as part of Oklahoma's UIC primacy program.

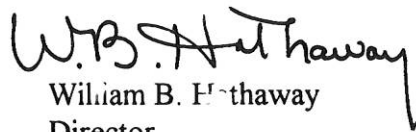
The two laws appear to authorize OCC to regulate all brine injection into formations deeper than 300 feet below the surface, including some types of Class I, III, and V injection activities. The regulation of brine mining activities above 300 feet appears to be delegated to the Oklahoma Department of Mines. Under this authority, OCC is currently regulating at least one type of Class V brine injection activity independent of Class II injection associated with oil and gas exploration and production activities. The Oklahoma Environmental Quality Act appears to grant ODEQ authority for some types of UIC activities exclusive of brine recovery activities. However, ODEQ is currently regulating Class III brine mining activities under SDWA section 1422 UIC primacy authority granted by EPA. In addition to changes in the State's statutes, the responsibility for regulating Class V injection wells used to remediate ground water contaminated

by leaking aboveground storage tanks and underground storage tanks was apparently transferred from ODEQ to OCC in a 1995 letter of agreement between the two State agencies. Other conflicts between controlling Federal and State statutory and regulatory authority may exist.

Our goal is to assure the correlation of state and Federal UIC authority granted to each specific state agency as provided in 40 CFR 145.32(a) and (c). When a question of state authority arises, our normal course of action is to request the state's governor to provide a legal interpretation from the state's attorney general. However, I prefer to work within our program partnerships whenever possible. I suggest that both State agencies coordinate the review of UIC authority in Oklahoma and provide collaborative interpretation of the division of responsibilities among State agencies under applicable State statutes and their effect on the EPA approved State UIC program. A definitive joint interpretation coordinated with the Attorney General's office is preferred, but separate corroborative interpretations from both ODEQ and OCC may be acceptable. If resolution is not obtained using this preliminary approach, a formal request of the Governor will be necessary. Since State UIC authority in Oklahoma appears to lie with three different agencies, resolution may also involve program revisions effectively transferring UIC primacy authority from one state agency to another pursuant to the regulatory requirements in the Code of Federal Regulations [40 CFR §145.32]. In order to meet UIC authorization requirements, ultimate resolution may also require revision to relevant Oklahoma statutes.

Commitment C.3 in the 1998 Agreement between Region 6 and OCC calls for the development of a plan to address this issue at the program level, if possible. To meet that commitment, we submitted an initial draft plan and requested comment from the UIC managers of both OCC and ODEQ in late November. My staff will continue to provide any available assistance to the State as requested. In order to expedite this matter, the statutory interpretation(s) should be submitted to the Region within 45 days after receipt of this letter, with a final plan to resolve the issue submitted to the Region within 45 days after the Region's concurrence with the statutory interpretation(s). We look forward to resolving this issue through our continuing environmental partnership. If you would like to discuss this matter, please call me at (214) 665-7100, or contact Mr. Larry Wright at (214) 665-7150.

Sincerely yours,



William B. Hathaway
Director
Water Quality Protection Division

cc: Mr. Mark Coleman, Executive Director
Oklahoma Department of Environmental Quality

Mr. Tim Baker
Pollution Abatement Manager, OCC

Mr. Larry Fiddler
UIC Manager, OCC

BOB ANTHONY
Commissioner

ED APPLE
Commissioner

DENISE A. BODE
Commissioner

OKLAHOMA
CORPORATION COMMISSION
P.O. BOX 52000-2000
OKLAHOMA CITY, OKLAHOMA 73152-2000

*Larry,
your copy -
Mike*

255 Jim Thorpe Building
Telephone: (405) 521-2301
FAX: (405) 521-3099

OIL & GAS CONSERVATION DIVISION



Mike Battles, Director

March 11, 1998

Mr. William B. Hathaway
Director, Water Quality Protection Division
U.S. E.P.A. Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Mr. Hathaway:

Enclosed please find the amended Agreement between our offices. Please note that we have revised the title of the document from AGREEMENT BETWEEN U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 6 AND OKLAHOMA CORPORATION COMMISSION, FEBRUARY 24, 1998, to simply AGREEMENT, in keeping with our understanding that the discussions and commitments contained therein reflect the cooperative effort between our staffs.

Should you have any questions or comments, please contact my office.

Sincerely,

Michael S. Battles
Director, Oil and Gas Conservation Division
Oklahoma Corporation Commission

Enc.

S-0119
MAR 13 1998
OIL & GAS CONSERVATION DIVISION
CORPORATION COMMISSION

SERVICE - ASSISTANCE - COMPLIANCE

AGREEMENT

In September 1997, EPA Region 6 commenced an informal review of the Oklahoma Corporation Commission's (OCC's) Underground Injection Control (UIC) program. On December 16, 1997, EPA Region 6 provided OCC a preliminary assessment describing issues identified in that review. This Agreement sets forth the process and timetable the agencies will use to address those issues. References to specific provisions of the Safe Drinking Water Act (SDWA) and evaluation factors published at 46 Fed. Reg. 27333 (May 19, 1981) were used in the December 16, 1997 preliminary assessment and are repeated in brackets in this Agreement for ease of reference, e.g., [Factor 5, Sec. 1425(a), (e) item 2].

The agencies have already reached consensus on one issue [Factor 2, Sec. 1425(a), (b) item 6]. The inadequate surface casing within the 1/4 mile area of review applied by the State program during its evaluation of the Link Oil's application for the Duncan #1 (OCC order #410083) will be resolved if and when OCC provides Region 6 with copies of completion reports (OCC Form 1002A) and plugging reports (OCC Form 1003 and 1003C) showing that all wells in the area of review were properly plugged.

In order to address the remaining issues, Region 6 and OCC agree to the following timetable and commitments. These commitments will be incorporated into an amended FY98 grant workplan and future workplans as appropriate:

A. Before April 1, 1998:

1. OCC will integrate its existing electronic databases by implementing a new electronic database. This accomplishment will enhance identification of operator non-compliance with OCC regulations, especially annual reporting requirements (OCC Form 1012), and the tracking of enforcement activities. The new electronic database will also allow OCC to more adequately complete data fields for annual inventory and quarterly reports (EPA Forms 7520). [Factor 1, Sec. 1421(b)(1)(B), items 2 and 3, and Sec. 1425(a); Factor 2, Sec. 1425(a), (b) items 2, 4, 7; Factor 3, Sec. 1421(b)(1)(C), items 1 and 2, and Sec. 1425(a), (c); Factor 4, Sec. 1425(a), (d)]
2. OCC will develop a draft action plan to accomplish the program commitments listed below for August 1 and December 1, 1998. To aid in this process, Region 6 will provide guidance and assistance as requested by OCC.

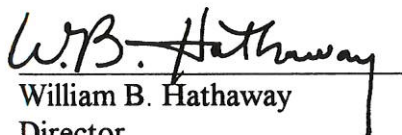
B. Before August 1, 1998:

1. OCC will review and modify, if necessary, the current UIC permit application process, including public participation, to address issues identified in the program review comments. Region 6 will provide guidance and assistance as requested by OCC.
[Factor 1, Sec. 1421(b)(1)(B), items 2 and 3, and Sec. 1425(a); Factor 5, Sec. 1425(a), (e) items 1, 2 and 3]
2. OCC will review and modify, if necessary, the current plugging and abandonment requirements, forms, and procedures for testing mechanical integrity to address concerns presented in the program review comments. Region 6 will provide guidance and assistance as requested by OCC. [Factor 2, Sec. 1425(a), (b) items 4 and 7]
3. OCC will review and, if necessary, modify the current enforcement policies and procedures to assure that all orders are enforced as written, i.e. termination. OCC will submit these changes to Region 6 for review, and as an addendum to quarterly reports, provide a list of all orders to which OCC initiates termination proceedings and/or terminates.
[Factor 1, Sec. 1421(b)(1)(A) and Sec. 1425(a)]
4. OCC will conduct a preliminary comparison of the applicable UIC program, including the 1981 Primacy Program Description and amended General Rules of the Oil and Gas Conservation Division [OAC Title 165 Chapter 10, effective December 31, 1991], with a representative sample of concurrent orders to determine the scope of authorization which may conflict with the Federally approved State UIC program. OCC will provide the results of this comparison to Region 6 before August 31, 1998.
[Factor 2, Sec. 1425(a), (b) items 2 and 3]
5. OCC will negotiate and finalize an enforcement agreement with Region 6 for fiscal year 1999. [Factor 4, Sec. 1425(a), (d)]
6. OCC will evaluate current staff assignments and propose a plan to address any current and/or future staffing deficiencies.
[Factor 3, Sec. 1421(b)(1)(C), items 1 and 2, and Sec. 1425(a); Factor 4, Sec. 1425(a), (d)]
7. Region 6 will monitor the implementation of the new electronic database, including progress in annual monitoring report compliance, and provide OCC with a written evaluation.
[Factor 3, Sec. 1421 (b)(1)(C), item 2, and Sec. 1425(a); Factor 4, Sec. 1425(a), (d)]
8. Region 6 and OCC will cooperatively develop a draft plan to alleviate any conflicts between Federal UIC authority for Class I, III, or V injection wells delegated to the Oklahoma Department of Environmental Quality and associated State brine injection authority pursuant to the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. (Final, December 1, 1998; see item C,3)

C. Before December 1, 1998:

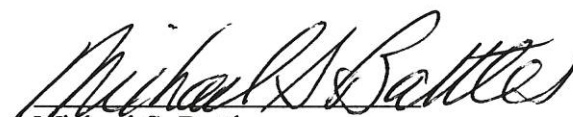
1. OCC will submit to Region 6 any UIC program revisions, both current and proposed, which identifies all applicable changes in OCC Rules and Regulations and State legislation exclusive of the currently approved State UIC program, including a crosswalk which compares the revisions with the current approved program. A revised Program Description, Memorandum of Agreement, and Attorney General's Statement will be submitted as necessary. Region 6 will provide guidance and assistance during this process as requested by OCC. Any approved program changes will be submitted by the Agency for incorporation by reference into 40 C.F.R. part 147.
2. Region 6 and OCC will independently evaluate the current methods used in the area of review and zone of endangering influence calculations and cooperatively develop an acceptable method, equivalent to the approved program, to adequately protect underground sources of drinking water from potential contamination by underground injection. [Factor 2. Sec. 1425(b), item 5]
3. Region 6 and OCC will finalize the plan to alleviate any conflicts between Federal UIC authority for Class I, III, or V injection delegated to the Oklahoma Department of Environmental Quality and associated State brine injection authority pursuant to the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. (see item B,8)

APPROVALS:


William B. Hathaway
Director

Water Quality Protection Division
Environmental Protection Agency, Region 6

2/24/98
Date



Michael S. Battles
Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission

3-2-98
Date

Mr. Larry Fiddler, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Fiddler:

Our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2002 (FY02) is enclosed. On August 21, 2002, Mr. Philip Dellinger and Mr. Mike Frazier visited OCC offices and participated in discussions with Mr. Tim Baker and Mr. Rod Davari concerning current UIC program implementation issues. Mr. Michael Vaughan of our Grants Section participated via telephone. Via e-mails on October 23, 2002, and November 7, 2002, and via telephone on November 13, 2002, we solicited comment on the draft evaluation from Mr. Davari. This report considers comments received from Mr. Davari via e-mail on November 21, 2002. As in previous evaluations, the FY02 evaluation consists of two parts:

- FY02 UIC grant workplan commitments and accomplishments
- UIC program oversight issues

Oklahoma Corporation Commission (OCC) staff exceeded the field activity targets and submitted all reports and updates required in the FY01 UIC grant workplan. With a reduction in the years 2000 and 2001 active UIC well inventory values, the number of 5-year mechanical integrity tests (MITs) performed and witnessed are within acceptable limits. I commend OCC management and staff on their renewed focus on correcting deficiencies in Oklahoma's UIC database. Fundamental UIC surveillance and enforcement actions depend on an accurate data management system. The primary objectives of OCC's UIC program during FY02 are presented in its Annual UIC Report for FY02, which we include as an appendix to our annual UIC program evaluation. The FY02 annual report presents limited program implementation information, and future reports should provide more detailed information regarding all aspects of the program along the same format presented in OCC's 94th Annual Report to the Governor for FY01, page 28.

As proposed by OCC, we are planning an "Area of Review Summit" with all Region 6 State UIC programs in the spring of 2003 to compare the methods used in the region for determining corrective action in the permitting process. In addition, EPA's National UIC Technical Workgroup received authorization to study current Area of Review (AOR) requirements and make appropriate recommendations for effective corrective action necessary to assure adequate protection from authorized injection activities. As our planning progresses, we

will solicit your participation in the summit and seek your comment on the draft agenda. I hope you understand that we continue to seek programmatic and legal interpretation on several fundamental issues related to Class II activities. In the meantime, our comments on OCC's draft Class II revision package are also forthcoming.

In a May 28, 2002, response, we provided our comments on the joint draft Oklahoma UIC program revision for Class I, III, IV, and V injection activities authorized under Section 1422 of the Safe Drinking Water Act (SDWA). My staff will provide guidance on the format of any re-submission in the near future. I remain confident that together we will address all significant UIC issues through the program revision process.

The spirit of partnership displayed by you and your staff is commendable. Our common efforts must assure that underground sources of drinking water are adequately protected from underground injection activities as mandated by SDWA. If you have any questions concerning UIC program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Phil Dellinger at (214) 665-7165, or Mike Frazier at (214) 665-7236, if they have UIC oversight questions, or Michael Vaughan at (214) 665-7313 about any grant related matters.

Sincerely yours,

Miguel I. Flores
Director
Water Quality Protection Division

Enclosure

cc: Tim Baker, OCC Pollution Abatement Manager, w/enclosure
Rod Davari, OCC UIC Manager, w/enclosure
bcc: Bruce Kobelski, (4606) w/encl.
Jerry Saunders, 6EN-WO w/encl.
Mike Vaughan, 6WQ-AT w/encl.
Mike Frazier, 6WQ-SG w/encl.

6WQ-SG:mfrazier:7236:12/4/02:L\oklahoma\occ\reviews\fy02\finalOCCEOY

6WQ-SG	6WQ-S	6WQ-AT	6WQ-AT	6WQ-A	FILE CODE:
DELLINGER	WRIGHT	VAUGHN	MILLER	BROWN	U WAT 2-4-1

**EPA REGION 6 FISCAL YEAR 2002 (FY02) END-OF-YEAR (EOY) EVALUATION
OKLAHOMA CORPORATION COMMISSION (OCC)
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM**

This report represents EPA's evaluation of activities of the Oklahoma Corporation Commission (OCC) toward meeting the FY02 UIC grant workplan commitments between July 1, 2001 and June 30, 2002, and our annual EPA oversight review of the State UIC program. On August 20-21, 2002, EPA Region 6 representatives met with OCC management and staff for EOY evaluation discussions. This report is in two sections: FY02 UIC grant workplan accomplishments and UIC program oversight issues.

FY02 GRANT ACCOMPLISHMENTS:

FY02 UIC Grant—EPA's approved FY2002 OCC UIC grant allotment for the OCC's Class II UIC program is \$318,100, which has been awarded in full. On September 6, 2001, \$27,300 was awarded and the remaining \$290,800 was awarded on January 18, 2002.

Quality Assurance—The Quality Assurance Project Plan (QAPP) was submitted on August 30, 2000, and following several revisions the QAPP was approved on October 18, 2001. The next QAPP update/revision is due on October 18, 2002. The Quality Management Plan (QMP) was received on November 7, 2001, and approved on November 21, 2001. A QMP update is again due on November 21, 2002.

Table 1. FY02 Grant Deliverables

Grant Deliverable	Due Date	Date Received
Quarterly Reports (Forms 7520)	7/30/01, 10/30/01, 1/31/02, 4/30/02	7/30/01, 11/13/01, 2/15/02, 5/01/02
SNC Violation Summary	Quarterly, as required	11/07/01, 5/01/02
Annual UIC Program Report	Due 8/15/02	Submitted on 8/15/02
Final Financial Status Report	9/30/2002	September 19, 2002
UIC Annual Inventory	Annually as requested by EPA - usually requested November/December	--
UIC Regulatory/Statutory Update - this information should be included in the Annual UIC Program Report	Due 8/15/2002	On 8/21/02, OCC reported no UIC Regulatory/Statutory changes. (Rod Davari, personal communication)

Table 2. Program activities, FY02 targets, end-of-year values and percent accomplished

Program Activities	FY2002 Target	End-of-year values (July 1, 2001 - June 30, 2002)	Target %
Inspections (On-site)	10,000	13,245	132
(Complaint related)	--	534	--
MITs (total)	2,300	2,960	129
MITs (Witnessed)	2,070	2,960	143
Compliance Reviews (total)	2,280	5,906	259
(Commercial Operations)	210	214	102
(Complaint Investigations)	--	678	--
Permits (Total Issued)	--	204	--
Technical Reviews	--	414	--
Ownerships Transferred	--	1,180	--
Public Hearings	--	276	--
(Staff attended public hearings)	--	276	--
Technical Conferences	--	480	--

Complaint Investigations/Inspections—OCC personnel investigate all pollution complaints, although not all investigations include a field inspection. The number of UIC complaints investigated during FY02 and the number of associated UIC inspections related to those complaints are significantly higher than any of the previous five grant years. State UIC management believes improvements in the UIC database management system and UIC enforcement actions caused the increase in the number of UIC complaint investigations and related well inspections. Table 3 shows the fluctuation in the reported values since FY97. To better understand these complaint related values, Region 6 requests that OCC provide a more detailed analysis of the large increase of these two reported activities for FY02.

Table 3. Number of UIC complaint investigations and associated inspections since FY97.

Complaint	FY02	FY01	FY00	FY99	FY98	FY97
<u>Investigations</u>	678	150	165	325	322	352
FY97-01 average	263					
	257 %	Increase from FY97-01 Average				
<u>Inspections</u>	534	150	140	107	108	106
FY97-01 average	123					
	435 %	Increase from FY97-01 Average				

FY02 PROGRAM ISSUES:

Annual UIC Inventory Accuracy—During FY02, the State program continued implementing policy and procedural changes that began in FY00, including a quarterly schedule for performing mechanical integrity tests. Correspondingly, UIC personnel are also working more closely with staff of the Field Operations Department in compliance assurance matters. The validity of OCC's data management system has also improved, especially UIC well inventory values. To improve the data base further, OCC recently requested and will receive additional federal funding to implement a global positioning system for more accurate well location information.

Beginning in 1997, OCC's Class II well inventory has decreased approximately 50% as the State UIC program renewed efforts to improve well inventory accuracy. EPA is still concerned about the apparent large number of former UIC wells that may remain unplugged because of inadequate operator financial assurance, a value ranging between 5,000 and 11,000 based upon the decrease in the well database. EPA anticipates further program analysis of required well closures during FY03.

Annual Reporting by Well Operators—OCC continues to increase its enforcement efforts concerning operator compliance with the reporting requirements of OAC 165:20-5-7. In response to an EPA oversight follow-up request, OCC staff provided updated values for 1999, 2000, and 2001 reports (see Table 4 below).

As in the federal requirements of 40 CFR §§ 144.28(h) and 146.23(c), every Class II operator is required to submit an annual report of authorized well operations to the applicable State UIC program regardless of whether the well is used for injection. Operators of both active and inactive wells must submit reports annually. Operators of transferred wells (both previous and current operator) must submit an annual report that covers the time that they operated the

Table 4. A comparison of OCC's UIC well inventory with operator compliance in submission of annual monitoring reports [OAC 165:10-5-7], between 1997-2001.

YEAR	REPORTED UIC ANNUAL WELL INVENTORY	UIC WELLS REPRESENTED IN REPORTS	PERCENT OF UIC WELLS IN COMPLIANCE FY01 ♦	PERCENT OF UIC WELLS IN COMPLIANCE FY02 ♣
2001	11,330	9,143 ✕	—	81%
2000	11,448	10,441 ✕	—	91%
		8,935 †	78%	
1999	15,610	9,807 ✕	—	87%
		9,118 †	80% [58%–1999]	
1998	15,995	8,093	[51%–1998]	—
1997	17,351	8,334	[48%–1997]	—

Shaded rows repeated from FY01 EOY. ✕ Values reported Fall 2002. † Values reported as of October 19, 2001.

♦ Percent of 2000 inventory value ♣ Percent of 2001 inventory value.

injection well(s). Operators of newly permitted wells must also submit an annual report even though the well may not have injected during the reporting period. This required self-reporting provides an injection history for all authorized injection, allowing each State UIC program to determine operator compliance with permitted injection parameters.

The currently reported compliance values for calendar year 2000 indicate that operators of approximately 91% of Oklahoma's Class II wells complied with OAC 165:20-5-7, an increase of approximately 13% from compliance rates reported in FY01. For 1999 reports, over 87% of Oklahoma's 2001 active well inventory currently comply, up from 80% reported in FY01 based on the 2000 active well inventory. Operators of over 4,000 wells from the 1999 inventory have either lost authority to inject or may now be operated by another responsible party following permit transfer. Although OCC's efforts have resulted in a substantial increase in operator reporting since first raising the issue in 1998, EPA remains concerned about operator non-reporting of injection well activity for calendar years 1999, 2000 and 2001, 13%, 9% and 19 % respectively. Since the goal is 100% compliance with each operator reporting annually the injection history for all permitted injection wells, OCC's compliance reviews of submitted reports and continuing enforcement actions should assure that every active operator timely submits appropriate annual reports as required.

Mechanical Integrity Testing—OCC regulations require the testing of Class II injection wells for mechanical integrity prior to operation, and subsequently, at least every five years (OAC 165:10-

5-6). On a case by case basis, the UIC Director may require more frequent testing to assure protection of underground sources of drinking water.

Table 5 shows the cumulative number of 5-year MITs performed on Class II wells in Oklahoma since 1993. The cumulative 5-year MIT value between 1998 and 2001 is 12,653, approximately 1,323 more MITs than the reported 2001 well inventory of 11,330. The cumulative number includes all MITs, even the re-testing following failure and re-testing prior to transferring well ownership. OCC's compliance reports (EPA Form 7520-3) indicated a 12% failure rate for MITs performed between October 1, 1999 and September 30, 2000, and a 10% failure rate for MITs performed between October 1, 2000 and September 30, 2001. Based on the current 5-year cumulative MIT value and a more accurate well inventory, general compliance with the 5-year mechanical testing requirement is apparent.

As part of EPA's oversight evaluation, EPA personnel reviewed approximately 450 mechanical integrity test (MIT) forms (OCC form 1075). The review included forms from all four OCC District Offices (Ada, Bristow, Duncan, and Kingfisher). The 448 reviewed MIT forms were taken from the top of a large stack of forms (estimated over 2,000) waiting to be filed following input into OCC's electronic UIC data management system. The review found 20 failures out of the approximately 450 forms reviewed, less than a 5 % failure rate. At the end of our visit, copies of some of the reviewed MITs were provided to the OCC UIC manager, including all identified failures. OCC's submission of EPA form 7520-3 for the federal reporting period for 2002 (November 7, 2002) indicates a similar failure percentage with 128 failures in 3063 MITs (4.2%). Previous 7520-3 forms submitted by OCC indicate an annual MIT failure rate of 8.9% (241 of 2722), 6.3% (153 of 2415), 7.1% (159 of 2226), 5.2% (140 of 2667), 4.5% (141 of 3118) for the reporting periods of 2001, 2000, 1999, 1998, and 1997 respectively.

Many of the reviewed MITs reflected unusually high authorized injection pressures in wells with shallow injection formation depths, for example: 500 psi with a packer depth of 600 feet, 600 psi at 900 feet, and 750 psi at 1,149 feet (commercial disposal well). If the recorded values are correct, the respective pressure/depth gradients for the above examples are 0.83, 0.66, and 0.65 psi per foot. Other reviewed records indicate authorized injection of 250 psi at a depth of 225 feet with treatable water at 75 feet below surface. EPA anticipates further evaluation of these and other apparently high authorized surface injection pressures.

EPA's review also found that OCC field inspectors personally witness "the performance of the pressure test" and certify the test data as "true, correct, and complete" by signing each OCC form 1075. However, most of the reviewed forms were generally incomplete and some even lacked the measured before and after annulus test pressures. To assure that the form 1075 provides adequate and complete information, OCC should consider additional MIT training and a possible certification program for all of its field inspectors.

Table 5: Number of Class II MITs (2-part) conducted between FY93 and FY02, annual inventory, and well variance between number of five-year MITs and annual inventory.

Fiscal Year	‘02	‘01	‘00	‘99	‘98	‘97	‘96	‘95	‘94	‘93
MITs (2-part) †	2,960	2,010	2,415	2,283	2,985	2,244	3,284	2,945	2,595	2,533
Cumulative 2-part MITs (5-year cycles)	12,653	9,693	7,683	5,268	2,985	--	--	--	--	--
		11,937	9,927	7,512	5,229	2,244	--	--	--	--
			13,211	10,796	8,513	5,528	3,284	--	--	--
				13,741	11,458	8,473	6,229	2,945	--	--
					14,053	11,068	8,824	5,540	2,595	--
						13,601	11,357	8,073	5,128	2,533
							14,775	11,491	8,546	5,951
								14,626	11,681	9,086
Well Inventory ♦ (maximum and minimum in bold)	♣	11,330	11,448	15,610	15,995	17,351	22,253	21,593	21,540	21,350
% annual change (+/-) % change from 1996	—	-1 -49	- 27 - 49	- 2.4	- 7.8	- 22	3.1	0.25	0.9	- 1.4
Difference between Class II Well Inventory and Cumulative 5-year MITs	—	607	1,763	(1,869)	(1,942)	(3,750)	(7,478)	(6,967)	—	—

♣ 2002 well inventory not yet reported.

† MIT values as submitted in end-of-year State program reports.

◆ Injection well inventory as reported by OCC annually; used in UIC grant funding formula, i.e., 2001 value used to calculate 2002 funding.

Update of Draft Section 1425 Program Revision—Preparation of Region 6 comments on OCC's draft Class II UIC program revision package continue because of personnel assignment changes and the undertaking of several key issues by EPA's National Technical Workgroup (NTW). The NTW will review and prepare recommendations concerning corrective action related to area of review/zone of endangering influence, a proposed amendment in the draft State program revision. Based on these new developments and past experience, Region 6 continues to develop its comments to the State program.

Update of Draft Section 1422 Program Revision—In a joint program submission with Oklahoma's Department of Environmental Quality (ODEQ), OCC seeks UIC Primacy authority for activities involving re-injection of brine subsequent to halogen removal and certain types of aquifer remediation activities associated with leaking petroleum storage tanks. At EPA's request, both Agencies submitted associated crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 transmitted comments to both agencies on May 28, 2002, and as of this report, neither State UIC program has re-submitted any amendments to the joint SDWA Section 1422 program revision package.

UIC/SWAP Integration—EPA believes the integration of OCC's UIC program with the development of Oklahoma's Source Water Assessment Program (SWAP) focused initially on UIC data input to the SWAP process and on the potential for additional federal funds available through ODEQ's drinking water program. Interagency cooperation between State UIC programs and those state agencies responsible for developing a Source Water Protection Program (SWPP) is essential in meeting the SDWA amendments of 1996. EPA requests that OCC personnel revive their efforts to participate in the development of Oklahoma's SWPP.

APPENDIX

Oklahoma Corporation Commission Underground Injection Control Year-End Narrative Workplan 2002

As "data quality improvement" was the primary campaign during the Workplan 2001, hence resulting in identification of "inactive" injection wells, Vacating Orders of the very same wells was the primary objective during Workplan 2002. Improving the Compliance rating of the program was elected as the secondary objective of the 2002 Plan.

Approximately 300 Orders were vacated during Workplan 2002. Majority of the wells associated with these Orders had already been converted to a non-UIC well or had been plugged and abandoned. This objective continues to be pursued, although not as vigorously in the current Workplan, since it does not constitute to be a major risk to the quality of UIC's database. Although majority of the Vacated Orders had already been "Terminated" by the end of Workplan 2001, in order to eliminate their effect on the quality of the information generated from the UIC's database; The process of Vacation of Orders was employed providing yet another opportunity to examine the status of the wells whose UIC Order being Vacated. The process requires Public Notice, Hearing before an Administrative Law Judge, and Order of the Commission; creating the opportunity for the Interested Parties to be notified and appear before the court, and if necessary challenge the findings of the Applicant.

Improving the Compliance rating was a natural result of the primary objective. The process was enhanced however, by improving the database management system's capability of inquiring the frequency of the testing cycle. The MIT "screen" was equipped with a series of pre-determined "queries" formatted in a "pull-Down dialogue boxes" by operator, District/county, and UIC Master List. This capability enables the system to produce listings, which are generated by county for ease of use by Field Inspector assigned to that county. Facilitating engagement of Field Inspectors directly in the Monitoring segment of the Program diminishes the overwhelming magnitude of the process, creates a "user friendly" flavor to the system and, promotes its use, therefore enhances the process.

Workplan 2002 was also marked as the time period during which the issues related to "Chemical Sealants" in the annulus were addressed. Recent improvements in the physical and chemical properties of these compounds and their economic advantages over traditional cement squeeze jobs in repairing casing leaks, required addressing issues and practices that have been an integral part of the Program for over a decade. Planning to approach these issues were devised in consultation with Region VI. These plans have been partially implemented in cooperation with Region VI, and the preliminary results are being evaluated to assess the validity of using such materials in UIC Class II wells' annulus as Packer Fluid.

END-OF-YEAR EVALUATION
OKLAHOMA UNDERGROUND INJECTION CONTROL PROGRAM
OKLAHOMA CORPORATION COMMISSION
FY 1986

I. Summary and Recommendations

The Oklahoma Corporation Commission (OCC) strengthened and improved its Underground Injection Control (UIC) program for Class II injection wells during FY 1986. The following are some of the principal accomplishments:

1. Completion of the historical search/inventory to the 98 percent level.
2. Continuation of active permit processing for Class II wells.
3. Completion of the draft Quality Assurance (QA) project plan for chemical analysis.
4. Implementation of a rule requiring permit applicants to provide additional information on reservoir characteristics.
5. Promulgation of regulations on proposed aquifer exemptions.
6. Development of a technical file review form and procedure.
7. Development of schedule for completion of mechanical integrity tests (MITs) on all Class II wells by August 1988.
8. Preliminary development of an ADP system for tracking UIC activities.
9. Completion of the FURS inventory update.

Recommendations for further strengthening/expanding program implementation:

1. Insure all relevant well data and other documentation to support permit decisions are in the Commission's official UIC files.
2. Insure that completion reports are submitted and MITs performed on all newly permitted wells prior to approving injection.
3. Insure all areas requiring aquifer exemptions are identified and necessary actions taken to obtain compliance.
4. Identify any necessary revisions to MIT schedule so that the tests will be completed by August 1988.
5. Reduce percentage of MITs witnessed as needed and considered advisable in order to accelerate the number of MITs performed to meet the approved schedule.

mm
4/21

6. Require all temporarily abandoned (TA) wells to demonstrate mechanical integrity or be plugged.
7. Insure that MIT testing procedures are consistent with EPA-approved methods. OCC should submit all exceptions to rules to EPA for review.
8. Develop MIT regulations which require positive annulus pressure on wells where monitoring is being utilized to demonstrate mechanical integrity.
9. Insure MIT test pressures are consistent with the rules.
10. Continue development of computerized tracking system of completion reports, citizens' complaints, inspections, file reviews and operator reports for compliance monitoring and enforcement.
11. Insure that adequate follow-up corrective action and enforcement are taken on violations.

Background - Grant Summary

The OCC is the receiving agency for the Oklahoma State UIC grant and regulates approximately 26,000 Class II injection wells. The OCC transfers to the Oklahoma State Department of Health (OSDH) the amount of \$100,000 of UIC program grant funds in FY 1986 to implement the Class I, III, IV and V program. That amount is reflected in the following summary of recent UIC grants to the State of Oklahoma:

<u>Fiscal Year</u>	<u>Basic and Reallotment Grant</u>	<u>Prior Year Unexpended</u>	<u>Total Available</u>
83	\$227,400	\$175,000	\$402,400
84	242,800	78,604	311,404
85	494,213	19,211	513,424
86	365,600	200,000	565,600

The 4.3% grant reduction resulted in the following changes to the FY 86 grant:

86	\$349,880	\$200,000	\$549,880
----	-----------	-----------	-----------

II. Program Evaluation

The following is a detailed evaluation of the OCC program by each program element of the workplan:

A. Permit Program, Application Review and Analysis

1. Permits

Permitting of new Class II wells has kept pace with applications. A total of 640 applications were received in

FY 86 and 658 were processed. No backlog in permits exists. The number of applications was significantly less than prior years due to the slowdown in the oil and gas industry.

The end-of-year evaluation included a review of a number of permit files. The review indicated that permit actions followed established procedures. Technical judgments in permitting also appeared to be appropriate. However, some permit files contained a variance from established rules or technical criteria. In all such cases, the permit file should include a thorough justification for the variance approved. File documentation should show that decisions are within established criteria. This is especially important on contested permits which may result in litigation should permit decisions be questioned (e.g., corrective action not required within the calculated radius of endangering influence, apparent excessive injection pressure, etc.). For example, one permit file did not show adequate backup for the determination of adequate confining zones. The E-log used for this determination was filed elsewhere; but this should be indicated in the permit file. Data on the permeability and porosity of the receiving formation needs to be included in the file; this is now to be submitted by the applicant. The calculation of the zone of endangering influence requires knowledge of the initial formation pressure; documentation of this value also should be included in the permit file. The current files include calculations of the radius of endangering influence around the proposed injection well.

Completion reports and MITs must be done for all permitted wells. There is not sufficient documentation in the permit files that these are being tracked (see p.11 Intensive Oversight Review). This is critical for enforcement. The ADP system for tracking completion reports and MITs on permitted wells should be available in FY 87.

2. Aquifer Exemptions

Early in the year it was identified that injection was occurring into producing zones which were also classified as USDWs. The BeBee field is an area of particular concern because of the amount of activity and the complaints received. Generally, produced water is reinjected back into the production zone. However, two commercial disposal wells had been permitted in the BeBee field which was disposing of brines higher in TDS content than what is contained in the aquifer.

Since being made aware that an EPA-approved exemption is required, OCC has proposed and passed final rules relating to the exemption of aquifers from protection as an under-

ground source of drinking water. A hearing was held on the BeBee field November 14, 1986. The OCC will issue an order on the BeBee field regarding exemption of the aquifer, pending EPA approval. The proposed exemption and the regulations which constitute a program revision are being sent to EPA for approval. In addition, OCC has scheduled a hearing to vacate the orders for the commercial disposal wells. The proposed exemption will prohibit any fluids but produced water from the BeBee field to be reinjected.

The other counties/fields where exemptions are necessary will be identified in FY 87 as specified in the approved workplan.

2. Transfers of Ownership

About 350 transfers of ownership were processed during the year. Records on these wells were checked to insure that reporting and operations were consistent with the OCC order. The surety was also checked.

1. Compliance Monitoring and Testing

1. Inventory/Historical Search

The intensive oversight review conducted following the midyear evaluation indicated the critical need for completion of the historical search/inventory. As a result, OCC placed an extensive effort toward the completion of that task. Employees were added to assist in completion. By the end of the year, the historical search was 98% complete. Only 20% of the wells identified required field checking to verify the actual operating status (i.e., plugged, etc.).

As a result of this search, OCC identified by the end of the fiscal year a total of 24,000 wells. At the time of primacy in 1981, approximately 8000 wells were identified. The name, location and order number on each injection well are entered into the ADP system.

2. FURS

The FY 86 update to FURS in December 1985 indicated over 18,000 injection wells under OCC jurisdiction. Due to problems with the system, OCC was credited for only 15,000 wells. For the FY 87 update the new wells discovered in the historical search will be added.

3. Citizens Complaints

Citizens' complaints were investigated by the field offices and reported to the OCC Headquarters' UIC office.

4. Inspections

Many of the field inspections are accomplished in conjunction with performance of MITs or as a result of citizens' complaints. In addition, this year inspections were also performed to determine or verify the status of wells identified in the historical search. Initial inspections were performed on all new wells.

5. Cement Record Reviews/File Reviews

The FY 86 workplan committed OCC to the completion of cement record reviews on wells permitted prior to 1981. The OCC has been conducting cement record reviews and file reviews in conjunction with the historical search. A technical file review form has been developed for entry of detailed information on well construction, cementing and hydrogeology into the ADP system. Therefore, the cement record review/file review and recording of well specific data will be accomplished concurrently.

Following the midyear program review, emphasis was switched from completion of cement record reviews/file reviews to completion of the historical search. Now that the historical search has been virtually completed, emphasis will again be placed on completion of file reviews. These file reviews track closely with the number of MIT pressure tests performed in order that the commitment for completion of MITs on wells existing at the time of primacy can be met. OCC has developed procedures for conducting file reviews which conform to EPA guidance.

6. Mechanical Integrity Tests

A revised schedule for the completion of MITs on wells existing at the time of primacy was submitted by OCC and approved by EPA on August 12, 1986. The schedule calls for completion in August 1988 of testing of wells existing at the time of primacy. The FY 87 workplan commits OCC to this schedule also. The schedule for MIT testing may have to be revised since more wells than were known to exist at the time of primacy have been identified in the historical search. Proposed revisions to this schedule should be identified by April 1, 1987, and made part of a revised FY 87 workplan. Also, any changes based on proposed rule changes need to be included in this schedule.

All wells, including temporarily abandoned wells, must demonstrate mechanical integrity within five years of primacy and every five years following that. Temporarily

abandoned injection wells which have not or cannot demonstrate mechanical integrity should be plugged. Therefore, all temporarily abandoned wells should be scheduled for mechanical integrity tests.

OCC continues to witness the majority of its MITs. It is recommended that reduction to no less than 25% witnessing will ease efforts for completion of MITs and will permit acceleration of the MIT schedule.

OCC has granted exceptions to the rules for mechanical integrity tests. First, as indicated on p.16 of the OCC response to the intensive oversight review, radioactive tracer surveys have been allowed in lieu of pressure tests. The method used is not approved for either the EPA program or the approved State program in Oklahoma. This test is generally effective for checking the integrity of the tubing and packer, but it does not verify casing integrity.

It was recommended in the FY 85 end-of-year evaluation that OCC consider testing the wells at a pressure lower than that normally required. This would test casing integrity while minimizing the possibility of damaging tubular goods. OCC is in the process of proposing rule changes in this regard. It was also recommended in FY 85 that OCC develop written criteria for granting exceptions to its mechanical integrity testing requirements. It is a commitment in the FY 87 workplan that criteria be developed for granting rule exceptions on MIT. Alternatives to MIT testing pressure tests and the setting of surface casing may need to be the subject of major program revisions. We, therefore, request to review OCC approved exceptions to the rules for these major program areas in order to insure continued and effective protection of USDWs. However, as reflected in the OCC letter dated June 18, 1981, exceptions to rules must comply with the intent of the rule.

The OCC response to the intensive oversight review question (p.18) stated that data on MITs performed on existing wells in 1981 and 1982 are not available. Wells may have to be retested in some cases unless documentation to support proof of a test can be provided.

The results of the MIT study agreed to in the primacy agreement indicate that OCC should develop regulations which require a positive pressure for wells where annulus monitoring is being utilized to demonstrate mechanical integrity and require wells utilizing zero "0" annulus pressure monitoring to have an initial pressure test followed by a pressure test every five years.

During the midyear file review, it was noted that a well operating at 600 psi was tested at 300 psi. In accordance with present OCC rules, the wells should be tested at the maximum authorized injection pressure or 1,000 psi, whichever is lesser but the pressure must be at least 300 psi. Although some of the old orders do not state pressure limits or volumes, the wells should be tested at their reported operating pressure. In addition, the beginning and ending pressure should be indicated on the MIT form.

7. Operator Reporting

Until completion of the historical search, it was not clear which operators were reporting. A more effective tracking system will be developed in FY 87.

C. Recordkeeping and Tracking

1. Historical Search/Inventory

As stated earlier, basic information on wells was entered into the ADP system by the end of year for FURS. This included operator name, location and order number on each well.

2. FURS

The FURS system can be updated on OCC's personal computers; however, the FURS files will be kept separately.

3. Citizens Complaints

Presently the field/district offices track citizens complaints and report to the State office. Complaints are tracked in the Commission's weekly update. These complaints presently cannot be tracked on the OCC ADP system but this capability will be developed in FY 87.

4. Inspections

A schedule for accomplishing field inspections was developed as a result of the historical search. This will continue in FY 87.

5. Cement Record Reviews/File Reviews

Programming has been completed for the well inventory data/file review data which will be entered into the ADP system in FY 87. This should also include tracking of completion reports.

6. MIT

One of the first capabilities developed by OCC on their ADP system was that to track scheduled MITs. The full capability to track MITs (pass/fail) enforcement and schedule will be developed in early FY 87.

7. Operator Reporting

OCC has not been able to verify that all permitted operators are reporting (see p.10 Intensive Oversight Review Comments). This will be tracked beginning in January 1987. Also, the operator reports must be tracked against permit conditions. Submittal of completion reports on permitted wells also needs to be tracked.

D. Enforcement

OCC needs to insure that follow-up actions are being taken as a result of the following activities. Close coordination with the District offices will be required.

1. Inventory/Historical Search

Some violations have been discovered as a result of this search. All violations must be tracked and addressed in accordance with the EPA/OCC program and enforcement agreements. Both the violations and follow-up actions should be tracked on the ADP system.

2. Citizens Complaints

OCC continues to make positive response to citizens' complaints. Operators are notified of deficiencies. If those are not corrected, a hearing is held to vacate the order.

3. Inspections

UIC headquarters and field staff continue scheduled compliance meetings approximately once a month. Communications via telephone are frequent. As previously described, operators are notified of deficiencies. If these are not corrected, a hearing is held to vacate the order.

4. File Review

Follow-up actions were taken on wells that failed file reviews. The '87 workplan commits OCC to taking action on these.

5. MIT

OCC has witnessed about 90% of its MITs. When a well fails an MIT, it is shut-in. The operator is required to plug or repair the well within 60 days. The district office

informs the State office (headquarters) if a well fails. The State office is also informed if the well later passes the test or if enforcement action is required.

Some field inspections in FY 86 verified the status of operator reporting. Enforcement of reporting requirements should be a priority item in FY 87.

E. Public Participation

As a result of the decrease in the number of applications, hearings and other public participation activities have decreased.

There are about three hearings a month, and about three technical conferences a week. Technical conferences are utilized to discuss possible exceptions to rules and other permit conditions. An exception is not granted without a public hearing.

F. Program Administration

OCC has submitted two revisions to its QA project plan for chemical analysis in response to EPA comments and will continue to work closely with EPA to obtain approval of the plan in early FY 87.

OCC has submitted the proposed aquifer exemption regulations to EPA for review. OCC should insure that major program revisions have EPA approval and that new MIT regulations are developed which would include rules to require a positive annulus pressure be maintained on wells where monitoring is utilized to demonstrate mechanical integrity.

OCC worked closely with EPA in the development of its FY 87 workplan. Many of the recommendations contained herein are made a part of that workplan. OCC has contracted for development of ADP capabilities for tracking of all UIC activities. Much progress has been made in this area since the midyear review and intensive oversight review were conducted. The staff has received adequate training in the implementation of the ADP system.

OCC continues to require funding at the beginning of the fiscal year, prior to the allotment of new Federal funds for the new year. In the past, OCC has utilized unexpended monies from prior years. However, as a precaution OCC should develop some provision for alternative State funding for the UIC program in the early months of the fiscal year until Federal funds become available. This would insure that UIC program activities are not disrupted at the close of the fiscal year.

DEC 19 1988

REPLY TO: 6W-SU

Mr. Tim Baker
Manager
Underground Injection Control
Oklahoma Corporation Commission
Jim Thorpe Office Building
Oklahoma City, Oklahoma 73105

Dear Mr. Baker:

This letter is intended to serve as your end-of-year progress report for FY 1988. We will not be conducting a formal end-of-year evaluation this year since we are adjusting our schedule to conform to your newly established grant cycle on the State fiscal year. We will be conducting your in-depth mid-year evaluation beginning in January 1989, with a review of your files, followed in February 1989, by the actual evaluation meeting and subsequent follow-up evaluation report.

The following lists program accomplishments for Federal Fiscal year 1988, and priority activities for your current State Fiscal year. We have revised this in accordance with your comments during our December 8, 1988, visit. We will discuss these items with you in depth at our evaluation meeting in February.

Program Accomplishments Federal Fiscal Year 1988:

- Meeting negotiated program commitments for permitting of injection wells.
- Exceeding negotiated program commitments for mechanical integrity tests, file reviews, and inspections.
- Completion of FURS inventory update within prescribed timeframe to insure appropriate allocation of resources next fiscal year.
- Submittal of final financial statement within established deadlines to insure timely allocation of any available unexpended resources to assist with program priorities.
- Increased staff to complete file review/cement record reviews and data entry.

Priority Activities State Fiscal Year 1989

- Insure documentation of permeability and initial pressure in permit, area of review calculations.

6W-SU:CONKLIN:kk:Disk:BC7/46:12/15/88:FILE CODE: GRA 2-2-4

6W-SU
WEAVER

DEC 10 1980

-2-

- Continue accelerated efforts to complete file reviews, MIT's and data entry.
- Continue working closely with EPA and District offices regarding inspections, citizens' complaints, and enforcement, including tracking of such activities.
- Continue close coordination with EPA regarding the aquifer exemption request for the BeBee field.
- Continue further refinement of the data management system to increase tracking capabilities.
- Complete all file reviews and entry of that information into the data management system.

If you have any questions or comments regarding this, please contact Barbara Conklin at (214) 655-7160.

Sincerely yours,

Oscar Cabra, Jr., P.E.
Chief
Water Supply Branch (6W-5)

FINAL END-OF-YEAR EVALUATION
OKLAHOMA UNDERGROUND INJECTION CONTROL PROGRAM
OKLAHOMA CORPORATION COMMISSION
FOR THE
BUDGET PERIOD OF JULY 1, 1988 TO JUNE 30, 1989

PROGRAM STRENGTHS

Coordination With the Oklahoma State Department of Health:

OCC participated in a Memorandum of Agreement with the Oklahoma State Department of Health to insure that oil and gas operations, including injection, adequately take into account the impact of hazardous waste injection wells within a 2 1/2 mile area of review. In addition, OCC is coordinating with OSDH on investigations regarding possible unauthorized injection of hazardous waste into a Class II well, and another case involving possible contamination of a public water supply.

Inspections:

A restructuring of their field operations unit, and improved weather and field conditions have allowed OCC to make up the shortfall to their inspection commitment from January and April, exceeded their 2nd quarter commitment of 1,000 inspections by conducting 1,100 inspections. Use of a new form by field inspectors allows for tracking of all UIC inspections performed, not just those where violations have occurred.

File Reviews:

OCC had completed 4240 file reviews by the end of the 2nd quarter, exceeding their commitment of 3,000. OCC will complete their first cycle of file reviews for all of their active wells by the end of the Federal fiscal year.

Enforcement:

OCC has added a UIC staff person to serve as an investigation coordinator. This has improved coordination between the UIC program and the district offices for the purpose of tracking and follow-up on UIC violations and citizens' complaints.

ISSUES RESOLVED

Permits:

A review of the permit files by EPA indicated that there was an increase in the amount of documentation in permit files, for technical decisions which were made. In addition, a fairly new permit form for commercial disposal wells clearly outlines many of the rules for UIC, thus promoting compliance by the operators. A similar form and procedure should be extended to cover enhanced recovery well permits.

Rule Changes:

OCC has submitted to EPA the rule changes for MIT, and exceptions to rules. In addition, they are considering adopting rules for corrosion in a field where this has been a problem. This may include cathodic protection and more frequent monitoring and testing requirements. As a result of the UIPC peer review, OCC is also considering adopting a rule requiring a minimum amount of cement above the injection zone.

REMAINING FOLLOW-UP ACTIONS

Mechanical Integrity Testing:

At the end of the 3rd quarter, OCC had completed 2925 of the 3000 MIT's they committed to. The shortfall in pressure testing has arisen because many of the wells have been found to be temporarily abandoned. OCC may not make their annual commitment in this area, but as with file reviews all active wells will have been pressure tested by the end of the federal fiscal year as part of the first cycle. Fluid levels of the temporarily abandoned wells will be monitored to insure no Underground Source of Drinking Water (USDW) contamination occurs. EPA will be taking a closer look at OCC's rules for temporary abandonment to determine if additional approval is required.

Well Filigree:

In a review of the computer files, it was noted that some of the compliance information had not been entered. However, once all the data has been entered into the data management system, tracking of operator annual reports and completion reports will be easier. At the present time, completion reports are checked manually, on a random basis. For compliance reviews verification of operator filing of completion reports should be tied to performing an MIT to insure all wells have been constructed in accordance with permit conditions.

File Reviews:

There are approximately 3,000 temporarily abandoned wells which still require file reviews. OCC will complete these in FY80. For their 2nd five-year cycle, compliance reviews will begin with older wells. OCC will be verifying by field inspections and interviews with operators and service crews, the accuracy of well records, i.e., any well workovers, etc. which are not in the files. In addition, they will be contacting the Corps of Engineers, who supervised some well pluggings in these areas.

Area of Review:

EPA will be scheduling a meeting with OCC and staff from our Osage Direct Implementation Program to discuss the Area of Review (AOR) requirements and the method for calculating the zone of endangering influence. This should resolve questions EPA has had about the OCC calculation and provide OCC with information to respond to operator's questions about this requirement. EPA will also discuss the method OCC used to develop the Base of Fresh Water maps.

OCT 30 1991

REPLY TO: 6W-SU

Mr. Tim Baker
Manager
Underground Injection Control
Oklahoma Corporation Commission
Jim Thorpe Office Building
Oklahoma City, Oklahoma 73105

Dear Mr. Baker:

Enclosed is the final end-of-year evaluation report for the FY91 Underground Injection Control (UIC) program, as administered by the Oklahoma Corporation Commission (OCC). Your review of the draft evaluation was appreciated and your comments were incorporated.

Thank you for your cooperation and assistance during the end-of-year evaluation process. As always, we welcome any suggestions as to how EPA can more effectively assist in the implementation of the State UIC program. Please contact Ruby Williams, at (214) 655-7160, if you need to discuss any aspect of this evaluation.

Sincerely Yours,

Mac A. Weaver, P.E.
Chief
UIC State Programs

Enclosure

RLW 10/29/91
6W-SU:WILLIAMS:gj:5-7160:10/29/91 DISK: RW/OCC-LTR.EOY
FILE CODE:

mjr
10/30 *11/10/30*

Wat 4-1-1
dec

OCT 30 1991

End-Of-Year Evaluation Report
Oklahoma Corporation Commission
Underground Injection Control Program
Fiscal Year (FY) 1991

Introduction

The following report summarizes the Environmental Protection Agency (EPA) Region 6 end-of-year evaluation of the Underground Injection Control (UIC) Program administered by the Oklahoma Corporation Commission (OCC). OCC has permitting and enforcement authority, for Class II injection wells, as specified under the primacy delegation. This evaluation covers the budget period from July 1, 1990 to June 31, 1991, and highlights program strengths, and issues under resolution.

This end-of-year conference was held July 24 and 25, 1991, at the OCC offices in Oklahoma City. Discussions were held between Ruby Williams, Oklahoma EPA/UIC (Region 6) Program Manager, Camille Hueni, EPA/UIC (Region 6) State Programs Unit Leader, and Tim Baker, OCC Pollution Abatement/UIC Manager. Introductions were made between Ms. Williams, and OCC Oil & Gas Division Director and Deputy Director, Jack Davidson and Michael Schmidt, respectively.

Program Strengths

Program Commitments: OCC has met or exceeded several negotiated program commitments. OCC conducted 1500 file reviews for compliance with regulations. This exceeded their commitment by 25 percent. Technical reviews were performed on 665 permit applications resulting in 637 permit approvals. Mechanical Integrity Tests (MITs) were witnessed prior to final approval on all permits issued. OCC witnessed 85% of all MITs conducted on Class II wells (commitment 25%).

Enforcement/Compliance: Violations were addressed with appropriate enforcement procedure, which included prompt detection, timely response and resolution with effective tracking of enforcement/compliance actions. Violations for Class II injection wells were resolved and the wells were returned to compliance within 90 days.

OCC had one case of suspected contamination of an underground source of drinking water (USDW) by a newly drilled Class II saltwater disposal well in FY91 in Logan County, Oklahoma. During the completion of the well, the well blew out. The pressure was great enough to cause fractures allowing the escape of gas and saltwater at the surface. OCC mandated that the well be plugged and the operator promptly complied.

Special Operations Unit for Pollution Prevention (SOUPP): OCC formed SOUPP to investigate and review potential pollution problems related to oilfield activities, including (but not limited to) Class II injection wells, saltwater disposal wells, abandoned wells, and all plugging activities. The program will be under the direction of Thadd Johnson, OCC General Administrator, and an OCC Commissioner. OCC has proposed that the current SOUPP staff of two will be expanded to four in FY92.

Oklahoma's State legislature has committed \$100,000 to the implementation of OCC's SOUPP program in FY92. EPA Region 6 has provided \$20,000 toward SOUPP's start-up and independent investigation of UIC violations.

Issues Under Resolution

Mechanical Integrity Testing (MIT): OCC fell short of fulfilling their FY91 MIT commitment under the federal Strategic Targeted Activities for Results System (STARS). OCC committed to performing 3500 MITs by the end of FY91, but actually completed 3135 (365 MITs shortfall). OCC has cited bankrupt operators' failure to report abandonment of their leases, resulting in "orphaned wells", and under staffing of data tracking/management personnel as the main contributors to the agency's MIT shortfall.

"Orphaned wells" are those injection wells on leases that bankrupt operators have walked away from. In many cases, the wells are abandoned, no plugging records exist, and no responsible party exists. OCC has identified approximately 3500 "orphaned wells" which continue to be carried in their UIC "active" well inventory due to no plugging record. OCC's UIC section is currently under a hiring freeze, but anticipates that four fulltime staff positions (to assist inspectors by tracking down responsible parties and/or plugging reports, etc) will be filled by January 1992. EPA will meet with OCC during the first quarter of FY92 for a brainstorm session to assist in fine tuning OCC's MIT inspection/management system to assure the fulfillment of FY92 UIC STARS commitments.

State Funding: The State legislature's total FY92 funds appropriation to the Oklahoma Corporation Commission will be reduced by \$2,000,000. In past years, the State has matched federal funding up to 40%, in order to properly fund the UIC program. In fiscal year 1992, only a 25% State match will be appropriated. Additionally, federal FY92 allotments for UIC grants decreased. OCC will be challenged throughout FY92 in their effort to satisfy UIC STARS commitments.

Citizen Complaints: OCC received approximately 25 UIC related citizen complaints in FY91, seven of which went to hearing and twenty-three were resolved. EPA continues to receive complaints directly from citizens and refers them to the State. OCC cites difficulties in determining if the cause of the alleged contamination is actually due to injection activities, complexity of litigating against the responsible party, limited funds for sampling, and limited State funds for plugging "orphaned" injection wells. Such "orphaned" injection wells are plugged with State funds on a priority basis (potential for endangerment of an underground source of drinking water). OCC's newly formed SOUPP unit has established a 1-800 hotline that will receive and investigate citizen complaints. EPA will continue to follow up on the actions taken and will assist OCC in resolving these complaints, consistent with the oversight process.

Comments

- * In an effort to enhance UIC regulations compliance, mechanical integrity test performance, and citizen complaint investigations/resolution, the Corporation Commission should conduct more frequent "UIC specific" training for their field inspectors to insure they are aware of UIC regulations and are conducting appropriate follow up. OCC should dedicate "UIC specific" field inspectors in districts where there is a high concentration of waterfloods in operation.
 - * In an effort to ensure prompt reappropriation of any unexpended FY91 funds, OCC should submit to EPA their final financial status report within 90 days following the close of their fiscal budget period. Oklahoma UIC program's final financial status report on FY90 funds was received by EPA in June 1991 (8 months later than the due date).
-

AUG 8 7 1992

Reply To: 6W-SU

Mr. Micheal Battles
Acting Director
Oil & Gas Division
Oklahoma Corporation Commission
Jim Thorpe Building
Oklahoma City, Oklahoma 73105

Dear Mr. Battles:

Enclosed for your review is the final end-of-year evaluation of the State's Fiscal Year (FY) 1992 Underground Injection Control (UIC) program, as administered by the Oklahoma Corporation Commission (OCC). The evaluation includes FY92 UIC achievements, and suggestions for program improvement during FY 1993. Mr. Tim Baker, Manager of Pollution Abatement/UIC, reviewed the draft report and provided State comments. These comments were taken under consideration in drafting the final report.

We appreciated the OCC UIC staff's cooperation and assistance during the evaluation process. Please contact Ruby Williams if you need to discuss any aspect of this evaluation, (214) 655-7160.

Sincerely yours,

Myron O. Knudson, P.E.
Director
Water Management Division (6W)

6W-SU:RWILLIAMS:x7160:8/24/92:disk:RW:EOYOCCL.FNL

6W-SU
WEAVER

m w
8/24/92

LOVE
OK 8/26/92

[Signature]
8/24

8/19/92

FY 1992 END-OF-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM

INTRODUCTION

On December 2, 1981, the Oklahoma Corporation Commission (OCC) was granted primary enforcement authority for the Underground Injection Control (UIC) program for Class II wells in the State of Oklahoma, including the lands of the five Civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates 21,658 Class II injection wells under the Oklahoma UIC program.

On July 1, 1992, an end-of-year evaluation conference was held at the Corporation Commission in Oklahoma City. Representing the OCC's UIC program was Tim Baker, UIC/Pollution Abatement Manager. The Environmental Protection Agency was represented by Ruby Williams, State UIC Program Manager. Discussions were also held with Mike Schmidt, Deputy Director of the Oil & Gas Division, regarding federal funding of OCC's UIC Program during fiscal year 1993.

SUMMARY

Accomplishments:

- o The Oklahoma Corporation Commission has met or exceeded the following end-of-year commitments under their FY 1992 workplan:

	<u>Goal</u>	<u>Actual</u>
On-site field inspections:	8,000	11,074
Mechanical integrity tests:		
- performed MITs	2,865	3,418
- witnessed MITs	(25%)	(86%)
Permit application reviews:	560	581
Compliance reviews:	1,200	2,802

- o OCC's monitoring program identified 2008 wells with UIC violations (nine of which were significant non-compliance). A total of 3212 enforcement actions were taken by the Commission to correct the violations and return these wells to compliance with UIC regulations within 90 days.
- o During Fiscal Year (FY) 1992, the Oklahoma Corporation Commission approved, under OCC Rule Making #58, a new enforcement system that will allow OCC field inspectors to write citations and assess automatic penalties in the field when a UIC rule violation is discovered. The new enforcement system went into effect on July 1, 1992.

- o The Commission approved OCC Rule Making #59 on May 28, 1992. This rule prohibits the permitting of any new commercial saltwater disposal wells within a Wellhead Protection Area. This rule effectively integrates UIC activities with the Comprehensive State Groundwater Protection Program (CSGPP) strategy.
- o The OCC successfully contained discharged wastes from a commercial Class II disposal well located near Elk City, Oklahoma which "blew-out" on May 4, 1992. All discharged fluids were collected in containment pits, the well was brought under control, and vacuum trucks transferred all the collected fluids into on-site frac tanks for temporary storage. On May 29, 1992, during remedial well work, there was an equipment failure which resulted in the discharge of an additional 5000 barrels of fluids. Again the OCC contained the discharge, brought the well back under control, and picked up the waste and placed it in on-site temporary tank storage. The Commission's containment efforts protected against potential endangerment of underground sources of drinking water due to surface discharge during an accidental release.

The Corporation Commission, Oklahoma Water Resources Board, and the Oklahoma State Department of Health (OSDH) Hazardous Waste Management Services collected samples from the containment pits and from the creek above and below the pits. The Beckham County Sanitarian collected samples from five private water wells located within one mile of the well blow-out and several area drinking water wells. OSDH laboratory analyses revealed that there was no contamination of public or private drinking water supplies and confirmed that the fluids discharged from the well were "non-hazardous".

The operator's efforts to remediate the well were unsuccessful. On June 19, 1992, the OCC ordered the operator to plug and abandon the well. The well was plugged by the OCC, using State funds. The plugging and abandonment was completed on August 8, 1992.

Items Targeted for Completion in FY 1992

- o The OCC is in the process of taking enforcement action against a commercial Class II disposal well operator, Southern Management Inc., (SMI). The Commission has cited SMI for operation without mechanical integrity, unauthorized injection of "non-hazardous" waste into a permitted Class II well, and falsification of data reporting. The OCC's Commissioner's Court heard the SMI enforcement case on August 10-11, 1992. Remediation and plugging and abandonment hearings have also been scheduled to be heard before the Commissioner's Court on August 17 and 24, respectively.
-

EPA Region 6 UIC State Programs staff is available to technically assist the State in determining proper remediation actions, and will continue to closely follow-up on compliance and enforcement actions taken by the State, consistent with the oversight process.

- o The OCC's UIC staff is in the process of proposing amendments to existent State Class II commercial disposal well regulations to increase the effectiveness of assuring the protection of Oklahoma's underground sources of drinking water. Amendments to existing regulations regarding commercial Class II disposal wells will include increasing the frequency of required mechanical integrity testing from once every five years to once annually and expanding the requirement for operator's proof of financial surety to include liability in addition to a plugging bond.
- o The OCC is taking one of its largest enforcement actions in years against Citation Oil & Gas and Mobil Oil Corporation for groundwater contamination of six public water supply wells located in the town of Cyril, Oklahoma. A Senior Administrative Law Judge reviewed the case and decided (8/11/92) in support of OCC Oil and Gas Division staff that there was contamination of Cyril's underground sources of drinking water due to oil and gas waterflood operations and saltwater disposal in surface pits in the Cement Field. The judge also ruled that Union Texas (operator of the Cement Field before unitization) and Mobil Oil (operator of the Cement Field after unitization) were the principal responsible parties and should jointly (50/50) finance a technical remediation study. Mobil Oil Company appealed the judge's ruling on 8/21/92. The OCC Commissioners' Court will hear the appeal.
- o During FY92, UIC specific training sessions were held at OCC District 1 (Bristow, Oklahoma) and District 3 (Duncan, Oklahoma) field offices. These training sessions were held in conjunction with quarterly District Field Office meetings. Training sessions for OCC District 2 and District 4 field offices are scheduled for September 1992.

Recommended Actions

- o The State is encouraged to continue to conduct UIC specific training sessions in conjunction with quarterly District Field Meetings throughout 1993. Immediate emphasis should be given to reiterating State and federal Mechanical Integrity Test(MIT) field performance procedures and how to ensure a valid test. Other recommended priority topics should include what constitutes authorized Class II waste and standard procedures for responding to and documenting citizen inquiries. These priority topics should be covered at all OCC District Field Offices by year end 1993. EPA Region 6 UIC State Programs staff is available to provide technical and educational literature, and speakers for UIC topics. We welcome future opportunities to accompany the State on such district training meetings.
- o The State's UIC staff should continue to demonstrate that citizen complaints are given the highest priority, are promptly investigated, and due diligence is exercised in resolving the complaint (which is consistent with OCC policy). Bi-annually (December and June), the OCC should make available to EPA Region 6 UIC personnel written documentation of activities regarding OCC's responsiveness to citizen complaints (detailing resultant investigative, enforcement and compliance actions taken). This information will be discussed during the mid-year and end-of-year State/EPA conference meetings.

DISCUSSION

Permitting

The Corporation Commission continues to permit wells as a high priority in program implementation. During fiscal year 1992, OCC received 581 UIC permit applications. The State approved 355 permits (92 of which were requests for permit modification) and 22 were denied or withdrawn.

Compliance Monitoring and Testing

Inspections

The total FY 92 UIC program commitment for inspections was 8000. The Corporation Commission completed 11,074 routine/periodic inspections during fiscal year 1992.

The OCC witnessed 86% of all MITs conducted during the 1992 fiscal year. This far exceeded their commitment to witness at least 25% of all MITs.

Mechanical Integrity Tests

The OCC's FY 92 STARS commitment for the performance of mechanical integrity tests (MITs) was 2865. The Commission performed 3418 MITs during the State's 1992 fiscal year.

Compliance Reviews

The OCC completed 2802 compliance reviews by the close of the State's 1992 fiscal year. This far exceeded their FY92 commitment of 1200 compliance reviews. The OCC reviews all Commercial Class II Operations and conducts routine field inspections if the operator is not using the continuous positive annulus pressure monitoring program.

Recordkeeping and Tracking

The current data management system tracks pending applications, mechanical integrity tests, annual and semi-annual reports, and stores individual well construction data in the well inventory file. In late 1991, the existing computer hardware was upgraded to accommodate the expansion of storage and data management capacity, and increase reliability (less down time). Additionally, an optical hard disc drive and a scanner were added to accommodate the storage of all reports and permits in their existing form.

The OCC currently has an electronic data tracking system in place for documenting complaints filed by the public, Department of Pollution Control, and OCC Field Operations.

Enforcement

By the close of the State's fiscal year, the OCC had cited 2944 well violations. Nearly 61% (1794) of all UIC violations are related to well monitoring and operator reporting failures. Approximately 36% (1071) of all violations are related to maintenance and operating violations. Mechanical integrity failures account for 6% of the total violations.

During FY92, a total of 3212 enforcement actions were taken by the Commission against these violations in order to bring the wells back into compliance with UIC regulations. Enforcement actions taken included: 2986 Notices of Violation (NOVs), 4 Administrative Orders (AOs), and 511 well shut-ins.

Significant Non-compliance (SNCs): During FY92, the OCC cited 2944 UIC-related violations, 9 of which were significant non-compliance (SNCs). These violations included one incidence of unauthorized injection, one incidence of data falsification, and three mechanical integrity violations. All wells that were found to be in SNC violation were shut-in, resulting in the operator's inability to dispose of produced waters and subsequently impacting the operator's ability to produce. Formal Notices of Violation (NOVs) were sent to the operator of each well. The OCC also issued four Administrative Orders.

All UIC violations were corrected and the wells were returned to compliance within 90 days. Plug and abandonment procedures were performed on wells in which remediation efforts to bring the well back into compliance failed.

The significance of a violation is a function of its potential for endangerment to an underground source of drinking water (USDW). The criteria for determining the potential for endangerment considers the presence/absence and location of a USDW, how many levels of protection (tubing, packer, casing, cement) are breached, quality of the injected fluid and the USDW, operational and geological experience in the adjacent area, well logs (cementing records, bond logs), thickness of intervening layers, injection pressure and rate and formation pressure, hydrogeological conditions, and type of well.

Notices of Violation (NOVs): OCC notifies the operator in writing of failure to file the required reporting forms in a timely manner. If the operator fails to respond, the OCC verifies that the well is in operation (a field inspection is made if needed). If the well is operating, OCC sends a second written notice certified by legal staff. If the operator again fails to respond, OCC requests a hearing to pull the permit and plug the well.

Mechanical Integrity Test (MIT) failure: All wells which fail a mechanical integrity test are shut-in until they are repaired. The operator is given a specified time to repair the well and to schedule a second test. If the operator is unable to repair the well, it must be plugged.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE
DALLAS, TEXAS 75202-2733



Mr. Michael Battles

Director

Oil & Gas Division

Oklahoma Corporation Commission

Jim Thorpe Building

Oklahoma City, Oklahoma 73105

Dear Mr. Battles:

Enclosed is the final end-of-year evaluation of the State's Fiscal Year (FY) 1993 Underground Injection Control (UIC) program, as administered by the Oklahoma Corporation Commission (OCC). The evaluation report includes FY 1993 UIC accomplishments, and suggestions for program improvement during FY 1994. The "draft" evaluation was reviewed by Mr. Tim Baker, Pollution Abatement Manager (who served as UIC manager the majority of FY 1993) and Mr. Bruce Langhus, current UIC Manager. Their comments were incorporated into the final report.

We commend your decision to give expanded emphasis and resources to the UIC program management. This has enabled OCC to significantly increase its program accomplishments in FY93. Especially noteworthy are the great strides OCC made in getting principle responsible parties to remediate Southern Management, Incorporated's class II commercial disposal facility. Additionally, the OCC took a number of positive steps to tighten control over all class II commercial facilities, including the proposal of Rulemaking 000086. I want to encourage OCC to continue program commitments in this area, giving special emphasis to strengthening enforcement.

We appreciate the cooperation and assistance received during the evaluation process. Please contact Mac Weaver or Ruby Williams if you need to discuss any aspect of this evaluation, (214) 655-7160.

Sincerely yours,

Myron O. Knudson, P.E.

Director

Water Management Division (6W)

Enclosure

cc: Tim Baker, OCC
cc: Bruce Langhus, OCC

**FY 1993 END-OF-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM**

INTRODUCTION

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for class II wells in the state of Oklahoma, including the lands of the five civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates a total of 19,787 class II saltwater injection wells (13,725 enhanced recovery injection wells, 5,755 non-commercial disposal wells, and 307 commercial disposal wells).

Effective May 19, 1993, Bruce Langhus succeeded Tim Baker as Manager of OCC's UIC Program. Throughout 1993 several UIC Strategy meetings were held at the Oklahoma Corporation Commission offices in Oklahoma City. Representing the OCC at these meetings were Bruce Langhus, UIC Manager, and/or Tim Baker, Pollution Abatement Manager. The Environmental Protection Agency (EPA), Region 6, was represented by Ruby Williams.

The first of the UIC strategy meetings was a mid-year evaluation conference held on May 5, 1993. On June 25, 1993, a meeting was held to conduct State/EPA negotiations of 1994 UIC Workplan commitments. Finally, an end-of-year evaluation conference was held on September 13, 1993.

SUMMARY

1993 UIC Accomplishments:

- o The Oklahoma Corporation Commission has met or exceeded the following UIC commitments negotiated under the FY 1993 workplan:

COMPLIANCE MONITORING & TESTING *			
	Mid-Year	End-of-Year	Goal
Routine/Periodic inspections:	5756	12,027	8000
Complaint response inspections:	46	137	95
Mechanical integrity tests:	1756	2533*	2500
% MITS witnessed:	99%	100%	25%
PERMIT PROGRAM, APPLICATION REVIEW			
Technical reviews:	231	636	560
Re-permits:	95	193	120
Permit Issuance:	360	576	500

[A total of 2,533 MITS were run as initial and 5-year tests. Virtually 100% of these tests were witnessed by OCC field personnel. This represents a significant portion of the work schedule for each of Oklahoma's 53 oil and gas inspectors].

A total of 307 Class II commercial class II wells exist as of the end of FY93. All of these wells were inspected at least once during the year by OCC's field inspectors. New inspection forms that now require the inspector to tally the last 10 days' load tickets (establishing injection volumes and source volumes) were utilized.

A total of 3273 enforcement actions were taken to correct 3125 UIC violations identified under OCC's compliance monitoring program. Fifteen (15) of the 3125 violations were significant non-compliance (SNC) violations. One hundred percent (100%) of the wells in SNC were returned to compliance with OCC regulations within 90 days.

ENFORCEMENT

Mid-Year	End-of-Year
488	3125
3	15
488	3273*
488	2943
221	312
0	18

* [In some cases, the OCC had to impose multiple enforcement actions against the same well-in-violation to expedite return to compliance]

OCC updated and re-formatted its UIC Quality Assurance Program Management Plan and Project Plan for Laboratory Analysis, in accordance with EPA's 1993 Quality Assurance Guidelines. These Quality Assurance documents were submitted to EPA Region 6 for review and approval.

In an effort to increase the stringency of compliance requirements for Class II commercial disposal wells, the OCC Oil & Gas Division proposed to the State Legislature, Rulemaking 000086. This Rulemaking proposes annual mechanical integrity testing and mandates that Class II commercial disposal facilities keep on file a "log" of all loads of wastes trucked to the facility for disposal via injection. The proposed retention period for the waste load "log" files is at least 5 years.

- Throughout 1993, the OCC has made great strides in getting the principal responsible parties to remediate the Southern Management Inc. (SMI), class II commercial disposal facility. The SMI Libby #1 well was plugged and abandoned on August 8, 1992, using State funds. The waste that blew out of the well was contained by earthen dike systems and later transferred to a newly constructed lined pit. Analysis of both the pit waste waters and pit bottoms (sludge) indicated that the wastes were non-hazardous. In October 1993, the non-hazardous pit waste waters (nearly 14 loads) were trucked to Allwaste Pre-treatment Facility, in Dallas, Texas for disposal. In November 1993, the temporary containment pit system was permanently closed. The OCC Pollution Abatement Department is currently in the process of conducting an environmental impact assessment of the entire abandoned disposal facility.
- The OCC UIC Department co-authored Oklahoma's comprehensive State groundwater Protection Plan (CSGWPP). In connection with this plan, five public meetings were held to publicize the role of OCC in helping the public design and implement local wellhead protection areas.

Items Targeted for Completion in FY 1994

- The OCC has filed suit against Southern Management Incorporated. The suit includes a monetary penalty assessment of \$385,000 for the UIC violations and other monies for the reimbursement of the State for plugging and remediation costs associated with the well.
- The OCC UIC Program will conduct a Public/Industry Outreach Project. The project will include the development of information brochures on class II wells, mail-out of the brochures to all commercial class II well operators, and four public meetings and presentations. The brochures and the public meetings/presentations will focus on clarifying what wastes are authorized for disposal via injection into a class II well and what constitutes RCRA-exempt oilfield wastes.
- During FY94, the OCC will create and implement a position of Compliance Coordinator. This will consist of a full-time technical professional to coordinate compliance enforcement. This effort is in response to OCC's recognition of the need to strengthen its enforcement program to encourage compliance. OCC has expressed its intent to augment its stance with industry and convey this to the public.

During FY94, OCC will be placing special emphasis on submitting post-primacy State UIC program revisions and other supporting documents, as deemed necessary by EPA, for Region 6 review, approval, and publication in the Code of Federal Regulations.

Recommended Actions

The OCC should continue its high priority given to the progression of the formal enforcement action(s) against principal responsible parties related to the Southern Management Incorporated (SMI) facility, including the eventual collection of the monetary penalty assessed (\$385,000). EPA Region 6 is available to assist the State in its efforts to ascertain "ability to pay" by providing access to national databases, accessible through the National Enforcement Investigations Center (NEIC).

The OCC should develop and implement a compliance review strategy based upon EPA UIC guidance No. 64 and heighten the priority given to conducting such reviews. Documentation of the performance of complete compliance reviews is vital to the support of OCC enforcement activities.

The Commission should re-evaluate the adequacy of the current UIC program financial surety requirements. EPA comments OCC's proposed UIC rule changes aimed at increasing the scrutiny of commercial class II operations; however, the rulemaking falls short of addressing financial surety. If the OCC believes this to be a statutory problem, consideration should be given to revising the Oklahoma statute. Current financial assurance requirements (\$) have often proven to be inadequate in the long term (with regards to multiple well leases and commercial facilities) and does not consider remediation costs. This leaves the State and its citizens with the financial burden of plug and abandonment, pit closure, and surface remediation.

OCC should place extra emphasis on the timely completion of "Special UIC Project Tasks" (e.g., Commercial class II Outreach, UIC Compliance Officer/Enforcement). These activities are funded through "one-year" project monies which become unavailable for drawdown after June 30, 1994.

DISCUSSION

Permitting/File Reviews

All UIC permitting and file reviews are conducted at OCC offices in Oklahoma City. Focus is on the determination that injection into an underground source of drinking water (USDW) is not occurring, that there is sufficient geologic confinement, and that there is injection zone isolation by cement behind the production (long) string. Casing and cementing requirements are set out "by rule". In 1984, the state determined and mapped the base of the USDW (based on 10,000 mg/l total dissolved solids) in each producing county. These maps are updated whenever new logs show that a review is needed. In 1993, OCC updated eleven (11) county base of treatable water maps via an EPA 106 Office of Groundwater grant.

Permits generally contain requirements for tubing, packer, and injection pressure limits. The OCC uses one-quarter (1/4) mile radius for determining the area of review (AOR). However, this can be reduced using a modified Theis equation to calculate area of endangering influence.

During FY93, Region 6 conducted semi-annual oversight file reviews. These reviews revealed that most of the files on permits issued over the current two-year period were complete with documentation of area of review (AOR) calculations, public notice, and financial surety determination. However, discussions with UIC engineering personnel revealed that class II commercial disposal wells permitted prior to 1986 were "grandfathered-in". Review of these older commercial disposal well files revealed an absence of documentation of AOR calculations. In general, well file information on older permits must be retrieved from the archives. This slows the state reviewers' post-permitting compliance review process and hampers EPA oversight file reviews.

INSPECTIONS

Detailed inspection forms are provided and used. The inspection reports are reviewed by District and Department supervisors. The date of the inspection, any resultant violations discovered, nature of the complaint, etc., are recorded and tracked by computer.

Beginning in 1992, the UIC Management staff has conducted UIC-specific training sessions at each of the four OCC District field offices in an effort to keep the inspectors abreast of the latest UIC regulations, policies, and procedures (e.g., mechanical integrity testing, RCRA-exempt oilfield wastes, and compliance inspections protocol).

There is a high injection well to inspector ratio. The OCC has adopted a risk assessment approach to prioritizing field inspections. The OCC requires annual inspections of all commercial class II wells and the highest priority is placed on pollution, health, and complaint related work. Response time to these is usually less than 24 hours.

During FY93, the OCC inspected 307 commercial class II wells (100% of the commercial inventory). Since the best deterrent to misuse of commercial facilities is a strong surveillance, inspections should include collection of a sample of fluid from the flow line to the well head or from holding ponds or tanks on the site. In general, the analysis should be predicated on the location of the well and the type of activity in the producing area (e.g., in agricultural areas, pesticides and herbicides might be useful indicators of misuse of the well). Where budgetary constraints dictate, actual laboratory "analysis" of the collected samples should be based on risk assessment and target recalcitrant operators.

Mechanical Integrity Testing

During FY93, the OCC conducted a total of 2533 MITs. Ninety-nine percent (99%) were witnessed by OCC inspectors. Wells that fail the MIT are shut-in by the inspector (immediately or within 48 hours). The operator is allowed 30 days to repair well. Oklahoma utilizes predominantly annulus pressure testing (APT) and review of cementing records as the means for determining mechanical integrity. The procedures being used are protective of USDWs. These may be supplemented by radioactive tracer surveys, cement bond logging, temperature surveys, or other approved MIT demonstration techniques.

Compliance and Enforcement

During FY93, the OCC reported (EPA Form 7520-1) conducting only 610 compliance file reviews. The end-of-year goal negotiated under the 1993 UIC Workplan was 1200 compliance file reviews. The commission's permit issuance process ensures that adequate levels of protection are in place to protect underground sources of drinking water (USDWs). Compliance monitoring, which incorporates both file reviews and field surveillance, is vital to ensuring that the levels of protection necessary to protect USDWs remain uncompromised.

EPA has recommended that OCC develop and implement a compliance review strategy based on EPA UIC guidance #64. In accordance with guidance #64, a complete compliance review incorporates the following three elements:

- (1) Review of Reports (routine monitoring reports submitted by the operator, post-MIT reports, and post-workover reports),
- (2) Review & Approval of Major Well Workovers (for class II a minimum of 25% of all major workover), and
- (3) Review of Well's Ownership and Adequacy of the Financial Responsibility Demonstration.

The OCC utilizes a variety of enforcement tools to achieve compliance. These range from simple notification by an inspector to field shut-ins, to hearings, to fines. A multi-level enforcement program is used in an attempt to achieve voluntary compliance. All levels of enforcement actions contain a time by which compliance must be achieved. Formal enforcement actions consist mostly of Commission orders to repair or plug the well. During FY93, all UIC violations were followed-up by enforcement actions, and all SNCs (15) were referred by the UIC Department to the office of General Counsel (OCC), which resulted in issuance of contempt citations.

PLUG AND ABANDONMENT ACTIVITIES

Well plugging may take place only after approval of the OCC and in accordance with a plugging plan as specified by the appropriate inspector. The plugging rules and base of USDW maps (available in District and Oklahoma City offices) provide a good framework for sealing off and protecting oil & gas zones and USDWs. Well cementers and operators are required to certify cement plug sets. A high percentage of plug and abandonment operations are witnessed by OCC inspectors.

OCC well permit requirements include an operator's proof of financial surety through the acquisition of a plugging bond (in the amount of \$25,000). This is designed to help cover the cost of plug and abandonment of the well(s) should an operator go bankrupt or disappear (leaving "orphaned" wells). However, the required financial surety amount of \$25,000 often falls far short of funding the plug and abandonment of multiple wells and does not take into consideration remediation costs.

The State Well Plugging Program provides approximately \$500,000 per year for the purpose of plugging "orphaned" wells. During 1993, nearly \$650,000 in State funds was committed to the plug and abandonment of 210 "orphaned" wells.

October 11, 1994

FY 1994 END-OF-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM

INTRODUCTION

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for Class II wells in the State of Oklahoma, including the lands of the Five Civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates a total of 19,787 Class II saltwater injection wells (13,725 enhanced recovery injection wells, 5,755 non-commercial disposal wells, and 307 commercial disposal wells).

On August 30, 1994, an end-of-year evaluation conference was held at the Oklahoma Corporation Commission (OCC) offices in Oklahoma City. Representing the OCC's Oil & Gas Division was Jay T. Edwards, financial administrator, Tim Baker, Pollution Abatement Manager, and Bruce Langhus, UIC Manager. The Environmental Protection Agency (EPA) was represented by Tom Love, Chief of Water Supply Branch, Mac Weaver, Chief UIC State Program, and Ruby Williams, Oklahoma UIC State Program Manager.

During the end-of-year conference, Ruby Williams presented the Commission's UIC and Oil & Gas Division management staff with a written summary of the Region's evaluation of OCC's 1994 UIC workplan accomplishment efforts. Successes, UIC activities deemed worthy of increased focus, and key 1995 initiatives were discussed. The following is a more detailed discussion of OCC's efforts itemized by each workplan task.

SUMMARY

UIC Accomplishments:

- o The OCC has met or exceeded their end-of-year targets for the following FY 94 workplan items:

	<u>Mid-Year</u>	<u>End-of-Year</u>	<u>EOY Goal</u>
<u>COMPLIANCE MONITORING & TESTING *</u>			
Routine/Periodic inspections:	5997	11,932	8000
Compliance File Reviews:	12	3718	1200
Complaint response inspections:	68	173	95
Mechanical integrity tests:	1812	2595	2500
% MITs witnessed:	87%	91%	25%

PERMIT PROGRAM, APPLICATION REVIEW

Technical reviews:	403	509	560
Re-permits:	61	80	70
Permit Issuance:	342	510	500

Mid-Year**End-of-Year****ENFORCEMENT**

Total wells with violations:	1762	1907
Total Significant noncompliances:	5	13
Total enforcement actions:	1722	2029*
Notices of Violations:	1631	1930
Well shut-ins:	87	87
Contempt Citations/Hearings:	5	13

* [In some cases, the OCC had to impose multiple enforcement actions against the same well-in-violation to expedite return to compliance]

- o The OCC's Oil & Gas Division proposed to the State Legislature and obtained final approval for Rulemaking 000086 (aimed at increasing the scrutiny of commercial Class II operations via annual MITs, five year retention of waste load tickets, etc). This rulemaking went into effect July 11, 1994.
- o The OCC UIC Program developed and distributed Public/Industry Outreach-oriented informational brochures which clarified what wastes are authorized for disposal via injection into a Class II well. The brochures were mailed out to all 317 Class II Commercial disposal well operators. Additionally, the OCC presented the information at all OCC District Field Offices and at eight industry meetings around the State (reaching over 600 industry representatives).
- o The OCC Oil & Gas Division created and implemented a position of Compliance Enforcement Officer (CEO). The CEO coordinated the development of new computerized general enforcement and Class II commercial compliance files. The CEO completed compliance reviews on nearly 200 Class II facilities, completed 55 area of reviews on older commercial wells and coordinated field inspections of those facilities found to be out of compliance.
- o The OCC updated and re-formatted its UIC Quality Assurance Program Management Plan and Project Plan for Laboratory Analysis, in accordance with EPA's 1994 Quality Assurance Guidelines. OCC's QMP has been approved and the QAPP is currently under review for approval.

- The OCC submitted post-primacy State UIC program revisions to EPA Region 6 for review, approval, and publication in the Code of Federal Regulations.
- Throughout FY94, the OCC continued to make progress in the remediation of the Southern Management Inc. (SMI), Class II commercial disposal facility. The SMI Libby #1 well was plugged and abandoned in August 1992. In October 1993, the non-hazardous pit waste waters were trucked to Allwaste Pre-treatment Facility, in Dallas, Texas for disposal. In November 1993, the temporary containment pit system was permanently closed.

Program Recommendations:

- The OCC should remain steadfast in there enforcement efforts against Southern Management Inc. (SMI), Class II commercial disposal facility. The OCC should strive to recoup at least monies representative of the economic benefit to the operator as a result of the violation. OCC attorneys are still in discovery attempting to pierce the corporate veil and remain unsuccessful at deposing SMI owner, G.W. Harrell.
- The OCC should re-visit its own Rulemaking #58 originally proposed and approved during FY93. The rulemaking calls for a new enforcement system that would allow field inspectors to write citations in the field when a violation is discovered.
- The Commission should re-evaluate the adequacy of the current UIC Program financial surety requirements. If the OCC believes this to be a statutory problem, consideration should be given to revising the Oklahoma statute. Current financial assurance requirements (\$) have often proven to be inadequate in the long term (with regards to multiple well leases and commercial facilities) and does not consider remediation costs. This leaves the State and its citizens with the financial burden of plug and abandonment, pit closure, and surface remediation.

Key FY95 Initiatives

- In FY94, an initial package identifying all OCC post-primacy State UIC Program revisions was submitted to Region 6 and is under technical and legal review. Throughout FY95, OCC will place special emphasis on providing (upon EPA request) other supporting documents deemed necessary to facilitate UIC Program revisions approval and publication in the Code of Federal Regulations.
-

- o The OCC will work with EPA Region 6 to facilitate the implementation of environmental justice (EJ) analyses at key UIC Class II facilities located throughout the State. On Oct. 3, 1994, the OCC submitted to EPA data necessary to conduct EJ analyses for ten Class II commercial disposal facilities located in Seminole County (a large portion of which is indian land under OCC's jurisdiction).

DISCUSSION

Permitting/File Reviews

All UIC permitting and file reviews are conducted at OCC offices in Oklahoma City. Focus is on the determination that injection into an underground source of drinking water (USDW) is not occurring, that there is sufficient geologic confinement, and that there is injection zone isolation by cement behind the production (long) string. Casing and cementing requirements are set out "by rule". In 1984, the State determined and mapped the base of the USDW (based on 10,000 mg/l total dissolved solids) in each producing county. These maps are updated whenever new logs show that a review is needed. In 1993, OCC updated eleven (11) county base of treatable water maps via an EPA 106 Office of Groundwater grant.

Oversight file reviews conducted by Region 6 early in FY94 revealed that OCC permits generally contain requirements for tubing, packer, and injection pressure limits. Permits issued over the current two-year period were complete with documentation of area of review (AOR) calculations, public notice, and financial surety determination. The OCC uses one-quarter (1/4) mile radius for determining the area of review (AOR). However, a variance can be granted if the calculated area of endangering influence is less than 1/4 mile.

Oversight file reviews further revealed that 50% of the Class II commercial disposal well files had poor or no documentation of AOR calculations. Discussions with UIC engineering personnel revealed that approximately 150 Class II commercial disposal wells were permitted prior to 1985 ("grandfathered-in") and were not subject to AORs. During FY94, the UIC Compliance Enforcement Officer (CEO) completed AORs on fifty-five (55) of these wells. The remaining ninety-five (95) wells not yet given AORs will be reviewed during FY95.

INSPECTIONS

The total commitment for inspections for FY94 was 8000. The OCC conducted 11,932 routine/periodic inspections. Detailed inspection forms are provided and used. The inspection reports are reviewed by District and Department supervisors. The date of the inspection, any resultant violations discovered, nature of

the complaint, etc., are recorded and tracked by computer.

The OCC UIC Management staff conducts UIC-specific training sessions at each of the four OCC District field offices in an effort to keep the inspectors abreast of the latest UIC regulations, policies, and procedures (e.g., mechanical integrity testing, RCRA-exempt oilfield wastes, and compliance inspections protocol).

The OCC has approximately 58 inspectors and an inventory of nearly 20,000 active Class II wells. Therefore the OCC has adopted a risk assessment approach to prioritizing field inspections. The OCC places a high priority on the annual inspection of Class II commercial disposal well facilities. High priority is also placed on pollution, health, and complaint related work. Response time to these is usually less than 24 hours. Funds for the oil and gas inspectors who perform these inspections do not solely come from UIC. Funds are also provided by the Oil & Gas Division.

Mechanical Integrity Testing

Effective July 11, 1994, the OCC adopted more stringent construction, testing, and reporting regulations regarding Class II commercial disposal wells. The OCC now requires annual MIT on all Class II commercial disposal wells. The OCC committed to conducting 2500 MITs and witnessing 25 % of them. During FY94, the OCC conducted a total of 2595 MITs. Ninety-one percent (91%) were witnessed by OCC inspectors. When a well fails an MIT inspector is normally present to direct the operator to shut the well in (immediately or within 48 hours). The operator is allowed 30 days to repair well.

The OCC requires tubing-casing annulus pressure testing (APT) to demonstrate mechanical integrity for significant leaks (Part I of MIT). The OCC reviews cement records for the demonstration of the absence of fluid migration (Part II of MIT). In general, the procedures being used are protective of USDWs. These may be supplemented by radioactive tracer surveys, cement bond logging, temperature surveys, or other approved MIT demonstration techniques.

Compliance and Monitoring

During FY93, the OCC reported (EPA Form 7520-1) conducting only 610 compliance file reviews. The end-of-year goal negotiated under the 1993 UIC Workplan was 1200 compliance file reviews. The Commission's permit issuance process ensures that adequate levels of protection are in place to protect underground sources of drinking water (USDWs). Compliance monitoring, which incorporates both file reviews and field surveillance, is vital to ensuring that the levels of protection necessary to protect

USDWs remain uncompromised.

EPA has recommended that OCC develop and implement a compliance review strategy based on EPA UIC Guidance #64. In accordance with Guidance #64, a complete compliance review incorporates the following three elements:

- (1) Review of Reports (routine monitoring reports submitted by the operator, post-MIT reports, and post-workover reports),
- (2) Review & Approval of Major Well Workovers (for Class II a minimum of 25% of all major workover), and
- (3) Review of Well's Ownership and Adequacy of the Financial Responsibility Demonstration.

Enforcement

The OCC utilizes a variety of enforcement tools to achieve compliance. These range from simple notification by an inspector to field shut-ins, to hearings, to fines. A multi-level enforcement program is used in an attempt to achieve voluntary compliance. All levels of enforcement actions contain a time by which compliance must be achieved. Formal enforcement actions consist mostly of Commission orders to repair or plug the well. During FY93, all UIC violations were followed-up by enforcement actions, and all SNCs (15) were referred by the UIC Department to the Office of General Counsel (OGC), which resulted in issuance of contempt citations.

The OCC is continuing their enforcement efforts against Southern Management Inc. (SMI), commercial Class II disposal facility for several UIC violations committed in 1991-1992. The OCC UIC staff proposed a monetary penalty of \$385,000 for UIC violations and \$87,000 to reimburse the State for monies expended to plug and abandon the Libby #1 well. Currently, settlement discussions between OCC legal counsel and G.W. Harrell's attorneys focusing on the negotiation of a settlement amount and a payment schedule have stalled.

PLUG and ABANDONMENT ACTIVITIES

Well plugging may take place only after approval of the OCC and in accordance with a plugging plan as specified by the appropriate inspector. The plugging rules and base of USDW maps (available in District and Oklahoma City offices) provide a good framework for sealing off and protecting oil & gas zones and USDWs. Well cementers and operators are required to certify cement plug sets. A high percentage of plug and abandonment operations are witnessed by OCC inspectors.

OCC well permit requirements include an operator's proof of financial surety through the acquisition of a plugging bond (in

the amount of \$25,000). This is designed to help cover the cost of plug and abandonment of the well(s) should an operator go bankrupt or disappear (leaving "orphaned" wells). However, the required financial surety amount of \$25,000 often falls far short of funding the plug and abandonment of multiple wells and does not take into consideration remediation costs.

The State Well Plugging Program provides approximately \$500,000 per year for the purpose of plugging "orphaned" wells. During 1993, nearly \$650,000 in State funds was committed to the plug and abandonment of 210 "orphaned" wells.

12/7/95

Mr. Michael Battles
Director
Oil & Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Battles:

Enclosed is the end-of-year evaluation of the FY 95 Underground Injection Control (UIC) program, as administered by the Oklahoma Corporation Commission (OCC). The evaluation includes UIC achievements and suggestions for program improvement for FY 96. Mr. Bruce Langhus reviewed the recently submitted draft evaluation and his comments have been incorporated in this evaluation.

The OCC UIC section completed the majority of the workplan items included in the FY 95 grant application. Permit activity was down somewhat, but that was due to a slowdown of oilfield activities in general. The UIC section exceeded workplan estimates in inspections, tests and reviews. We appreciate the cooperation and assistance of the UIC staff during the evaluation process, and your continued commitment to the UIC State Program. Please contact Clint Duty at (214) 665-7524 if you need to discuss any aspect of this evaluation.

Sincerely yours,

William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: Bruce Langhus, OCC
Mike Schmidt, OCC
Tim Baker, OCC

6WQ-SG:DUTY:Deb:10/26/95:OCCEOY5: ~~XXXXXXXXXX~~

2-4-1

6WQ-SG
Graves

6WQ-SG
Wright

6WQ-S
Cabra

12/06/95

FY 1995 END-OF-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM

INTRODUCTION

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for Class II injection wells in the State of Oklahoma, including the lands of the Five Civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates a total of 21,596 Class II saltwater injection wells (13,693 enhanced recovery injection wells, 5,346 non-commercial disposal wells, 357 commercial disposal wells and 2,200 temporarily abandoned wells).

On August 23, 1995, an end-of-year (EOY) evaluation conference was held at the OCC in Oklahoma City. Representing the OCC's Underground Injection Control (UIC) program were Bruce Langhus, Van Nguyen, Suchard Jindurasrat, Don Yarbrough, and Polly Vandiver. The Environmental Protection Agency (EPA) was represented by Clint Duty.

SUMMARY

1995 EOY UIC Accomplishments:

- o The Table below summarizes OCC's accomplishments in meeting the commitments negotiated under the FY 1995 workplan:

Compliance, Monitoring and Testing	EOY Act.	EOY Est.
Field Inspections	11443	8000
Permit File Reviews	4420	1200
Complaint Emergency Response Inspections	100	95
Mechanical Integrity Tests (MITs)	2945	2500
Percent MIT's Witnessed	99%	25%
Joint UIC Staff/Inspectors Field Investigations	30	24
Mail Inventory Form 1012 to Operators	9000	9200
Check 1012s for Positive Annulus Pressure	7266	9200
Check 1012s Against Permit Conditions	7266	5500
Complaints Investigated	105	300

Application Review/Permit Program	EOY Act.	EOY Est.
Technical Reviews	487	560
Permit Issuances	315	500
Re-permits	56	120
Permits Denied/Withdrawn	4	---
Transfer of Ownership	1210	500
Program Management/Public Participation		
Technical Conferences with Applicants	80	60
Hold Protested Permit Public Hearings	65	50
Attend Enforcement Action Public Hearings	30	15
Enforcement		
Total Wells with Violations	433	--
Total Significant Non-compliances (SNC)	27	--
Cases of Alleged Contamination of USDW	0	--
Total Enforcement Actions	215	--
Notices of Violations	142	--
Well Shut-ins	0	--
Contempt Citations/Hearings	73	--

The table shows that the OCC met or exceeded most of the EOY estimates submitted in their FY 1995 workplan. Permitting activity was down somewhat, but that was probably related to decreased activity of oil and gas companies in general. Some operators did not respond to the Form 1012s they received and the OCC is currently working with these operators to ensure they respond to the Form 1012 request. Of particular note is that the OCC was able to witness almost all of the MITs performed. The MIT is a good indicator of well integrity which is important in insuring that fluids are injected into the permitted zone.

- o The OCC completed annual updates to its UIC Quality Management Plan (QMP) and its Quality Assurance Project Plan (QAPP) for chemical analysis in accordance with EPA's 1994 Quality Assurance Guidelines. Both documents have been approved by Region 6.

- o The OCC UIC Program developed an industry outreach-oriented oil field handbook describing innovative pollution prevention technologies applicable to Class II UIC small oil and gas operators. The final brochure was mailed out to 300 commercial Class II UIC operators. The OCC presented the information at six Pollution Prevention Workshops.

Additionally, the OCC UIC group, in conjunction with their Oil and Gas Division and Oklahoma State University developed a manual of Best Management Practices (BMPs) for soil erosion at exploration and production sites.

- o In the first part of FY 95 the OCC coordinated efforts with EPA Region 6 in implementing Environmental Justice analyses of ten Class II commercial disposal wells in Seminole County. These wells are on lands of the Five Civilized Tribes and therefore, under the OCC's jurisdiction. In the past, the OCC has had disagreements with the Bureau of Indian Affairs (BIA) over prosecution of pollution complaints in Indian country. The OCC, the BIA and the Seminole Tribal Council continue to discuss jurisdictional issues over these Class II wells.
- o The OCC continues to pursue legal actions against Southern Management Inc. (SMI), the operator of a Class II commercial disposal facility who committed several UIC violations in 1991-92. While the District law suit against the owner of SMI is still in discovery, the OCC is negotiating a settlement. The owner has agreed to pay all plugging costs (approximately \$87,000), and has also offered to work off the assessed fines (\$385,000) through community service, namely using his own heavy equipment in the remediation of orphaned oil and gas sites in the state. The OCC is committed to recovering as much of these fines as possible and OCC's General Counsel is reviewing the offer.
- o Oversight file reviews conducted in FY 94 revealed that approximately 150 Class II commercial disposal wells were permitted prior to 1985 ("grandfathered-in") and were not subject to area of review (AOR) determination. The UIC Compliance Enforcement Officer completed AORs on fifty-five of these wells in FY 94. AORs on the remaining ninety-five wells were completed in FY 95. Twenty-five mud-plugged or unplugged boreholes were found within the one-half mile AOR of these Class II commercial disposal wells. OCC personnel have sampled private water wells adjacent to these problem wells and have yet to discover any signs of ground water pollution.
- o The OCC has purchased seven lap top computers for field inspectors to gather UIC compliance data. The lap tops are equipped with hard drives able to hold the entire UIC database. ~~New compliance data is to be transmitted to the~~
UIC LAN so that the department database remains up to date.

A new database application has been created which allows a new MIT record to be created in the field and imported into the lap top's database. Work continues on the software for exporting new records into the UIC LAN and importing UIC updates into the lap tops. This capability will be useful to field inspectors as they will be able to research permit conditions and compliance data on UIC wells while in the field.

- o Rulemaking #58, implemented in FY 95, enables field inspectors to issue tickets in the field thereby allowing UIC infractions such as unpermitted injection and MIT failures to be cited immediately. This process improvement will shortcut the long waits associated with OCC court hearings which were necessary to assign fines.
- o The OCC submitted all post-primacy State UIC Program revisions to EPA Region VI for approval. These revisions were reviewed by EPA Region VI and determined to be non-substantial and approved on July 28, 1995.

Recommended Actions

- o The OCC should re-evaluate the adequacy of the current UIC Program financial surety requirements. Current financial assurance requirements have often proven to be inadequate in the long term (with regards to multiple well leases and commercial facilities). Rulemaking #86, which became effective in July 1994, imposes additional surety requirements for commercial operators with facilities that include underground pits. While this may better cover the costs of pit closure, it does not alleviate the State's financial burden of well plug and abandonment and surface remediation.
 - o The OCC should consider implementing a sampling program to periodically monitor water wells in the vicinity of the problem wells identified during the AOR analysis of Class II commercial disposal wells that were permitted prior to 1985 (see Page 3). Though initial sampling indicated that there is no groundwater contamination, this could be a problem area in the future. If State funds are available for plugging abandoned wells, the problem wells identified in this analysis should be placed high on the plugging priority list.
-

JAN 24 1997

Mr. Michael Battles, Director
Oil & Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Battles:

On December 13, 1996, an end-of-year evaluation conference call was held between the Oklahoma Corporation Commission (OCC) and the Environmental Protection Agency (EPA), Region 6. Representing the OCC was Mr. Bruce Langhus and representing EPA was Ms. Kathy Ketcher and Mr. Brian Graves. The enclosed report summarizes the EPA's evaluation of the OCC's performance in administering the Underground Injection Control (UIC) Class II program in the State of Oklahoma for Fiscal Year 1996.

We appreciate the effort Mr. Langhus and his staff have put into the evaluation process and their continuous partnership with Region 6. If you have any questions about the enclosed report, please contact Ms. Ketcher at (214) 665-7196.

Sincerely yours,

William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: Bruce Langhus, OCC
Mike Schmidt, OCC
Tim Baker, OCC

bcc: David Jones (6WQ-SG) w/encl

SK 1/22/97

6WQ-AT:KKETCHER:tm:x7196:1-21-97:\EOYOCC.006

6WQ-AT

BROWN

1/23/97

6WQ-A

HOPPERS

1/24/97

FY 1996 END-OF-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
 UNDERGROUND INJECTION CONTROL PROGRAM

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for Class II injection wells in the State of Oklahoma, including the lands of the Five Civilized Indian Tribes, but not including those on other Indian lands.

The following report details the significant accomplishments made by the OCC in meeting its Fiscal Year (FY) 1996 workplan commitments. The report also summarizes items that were discussed during the end-of-year teleconference held on December 13, 1996, between the OCC and the Environmental Protection Agency (EPA).

FY 1996 STRATEGIC NUMERICAL WORKPLAN TARGETS

INSPECTIONS

Activity	FY 1996 Target	Mid-Year Accomplishments	End-of-Year Accomplishments	Percent Completed
On-Site Field	8,000	3,194	13,352	166.90%
Joint Field	24	30	455	190.00%
Inspections Related to Complaints	95	34	76	80.00%
MITs	2,500	1,213	3,284	131.36%
Witness 25% of all MITs	625	1,209	3,284	525.44%
Compliance	1,650	1,029	1,545	93.63%
Reviews				

PERMITTING

Activity	FY 1996 Target	Mid-Year Accomplishments	End-of-Year Accomplishments	Percent Completed
Re-Permit	120	81	121	100.00%
Technical Reviews	560	273	399	71.25%
Issue Permits	500	184	392	78.40%
Processing Transfer of Ownership	500	765	1,584	317.00%

DELIVERABLES

Item	Due Date	Received
FY 96 Financial Status Report	9-30-96	Dec 1996
QMP Update (QTRAK# OQ-97-039)	9-30-96	Jul 1996
QAPP Update (QTRAK# OQ-97-046)	9-30-96	Jul 1996
Regulatory Update Report	7-30-96	Dec 1996
Well Inventory Report	12-31-95	Has not yet been requested from EPA Headquarters

GRANT INFORMATION

OCC's Grant Allocation for FY 1997 is \$377,000. The grant process has been initiated and the award of funds is expected at the end of January 1997.

END-OF-YEAR ISSUESWorkplan Target End-Of-Year Shortfalls

The Strategic Numerical Workplan Target chart identifies the OCC's level of commitment regarding all activities within the UIC program. At end-of-year, all activities exceeded or were within the expected completion range of end-of-year targets. The apparent shortfall in the number of permits issued is not considered a concern due to the relatively small number of applications that have been received throughout the year. The OCC did bring the total number of permits issued within a reasonable approximation of the workplan commitment for FY 1996 (78.4%).

Class II Commercial Disposal Wells Not Subject to AOR Determination

Background: Oversight file reviews conducted in FY 1994 revealed that approximately 150 Class II commercial disposal wells were permitted prior to 1985 ("grandfathered-in") and were not subject to area of review (AOR) determination. The UIC compliance Enforcement Officer completed AORs on 55 of these wells in FY 1994. AORs on the remaining 95 wells were completed in FY 1995. Twenty-five mud-plugged or unplugged boreholes were found within the one-half mile AOR of these Class II commercial disposal wells. OCC personnel have sampled private water wells adjacent to these problem wells and have yet to discover any signs of ground water pollution.

The OCC was encouraged to consider implementing a sampling program to periodically continue to monitor water wells in the vicinity of these problem wells. Though initial sampling indicated that there was no ground water contamination, this could be a problem in the future. OCC was advised (if State funds are available for plugging abandoned wells) to place these problem wells high on the plugging priority list.

Status: During FY 1996, the OCC was forced to shift emphasis from the monitoring of these particular water wells to conducting inspections and monitoring of commercial disposal wells with pits. The OCC has committed to reshifting emphasis in FY 1997 and will again monitor private water wells adjacent to the problem wells and follow-up on any problems or instances of alleged ground water contamination.

Witnessing all MITs

Background: An overtarget of witnessing all MITs occurred due to operators' misunderstanding of the proper way to fill out and sign an inspection report. Operators thought they were signing the inspection form indicating their approval for a previously scheduled MIT to be performed, when actually they were signing the inspection form indicating they had witnessed the MIT. The OCC has remedied this problem, and all operators now know where to place their signatures on inspection forms when witnessing MITs.

Status: Witnessing MIT percentage targets were set at 25% for FY 1996. Due to the enormous overtarget achieved at mid-year FY 1996 (525%), targets were negotiated for this element at a more realistic goal of 90% for FY 1997.

Contamination of USDW

In October 1996, OCC received a report of surface water contamination occurring in Stephens County, Oklahoma. Further investigation showed extensive salt water contamination in a wetland area north of Countyline, Oklahoma, and reports of private water wells ruined by salt water. In response to the wetland contamination, the OCC immediately ordered several adjacent injectors to be shut in and a containment dyke to be built around the affected land area in an effort to stop further contamination and to determine where the salt water seep was originating from. The operator, Mobil Oil Company, was directed by the OCC to deliver within 90 days from October 25, 1996, the following study: 1) an audit of the subsurface pressure conditions in the area to summarize all the down-hole pressure tests that have been performed, radius of endangerment calculations to predict pressures near the borehold during dynamic conditions, and injection profiles of representative injection wells to document down-hole chokes are working as per design; 2) documentation of the chemistry of injectate, leachate from nearby pit areas, and seep water; 3) fluid depressions tests on the producing wells nearest the seep (WHU #23-7A, WHU #23-9A, and WHU #25-2A) to document any holes in the casing, that during periods of high standing fluid, are allowing salt water to escape into shallow aquifers; and 4) electro-magnetic survey over the area of the seep and the nearest well. In a hearing to be held January 17, 1997, Mobil is expected to file for an extension of 60 additional days to finish the required testing and complete the study.

Further investigation has revealed that private water wells located on adjacent properties from the affected wetlands were also contaminated with salt water; therefore, the OCC has ordered Mobil to begin replacing the wells. To this date, Mobil has replaced 11 private water wells and continues to test and monitor wells in the area.

Summary of Workplan Goals for FY 1996

The preceding report has effectively identified the OCC's level of commitment regarding all goals and activities within the UIC program. All matters pertaining to programmatic activities and accountability have been addressed. At the end of FY 1996, all activities exceeded or were within the expected completion range of targeted goals.

Super



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

APR - 7 1998

Mr. Michael S. Battles
Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, Oklahoma 73152-2000

Dear Mr. Battles:

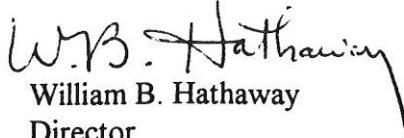
Enclosed is the Region 6 end-of-year (EOY) review for fiscal year 1997 (FY97) of the Oklahoma Corporation Commission's (OCC's) Class II Underground Injection Control (UIC) program. This year's EOY program evaluation consists of three parts:

1. The FY97 UIC grant workplan commitments and accomplishments,
2. The preliminary review comments of December 16, 1997, with OCC's UIC staff responses of January 15, 1998, which identify specific programmatic issues, and
3. The 1998 interagency Agreement which delineates specific commitments and deadlines which will guide our agencies in addressing the issues identified in the preliminary review.

Pursuant to the requirements of the Safe Drinking Water Act, the Agency's oversight activities are designed to assure that any Class II State UIC program maintains its "effectiveness". Therefore, the Agreement commitments will also be monitored and assessed through the amended FY98 and future FY99 grant workplans. However, if existing problems are not resolved by this informal approach, a formal review of Oklahoma's Class II UIC program may become necessary. My staff will remain available to assist your staff throughout these activities.

I again commend your UIC staff for their cooperation during the preliminary review. My staff looks forward to working with your agency during the upcoming oversight activities. If you have any questions concerning the enclosed FY97 review documentation or any other oversight issues, please call me at (214) 665-7101 or contact Mr. Larry Wright at (214) 665-7150.

Sincerely yours,


William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: ✓ Honorable J.C. Watts
Member, United States House of Representatives

Mr. Michael S. Battles
Director, Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, Oklahoma 73152-2000

Dear Mr. Battles:

Enclosed is the Region's end-of-year (EOY) review for fiscal year 1998 (FY98) of the Oklahoma Corporation Commission's (OCC's) Underground Injection Control (UIC) program. This annual evaluation includes several modifications suggested during recent conferences with OCC's UIC staff. The FY98 EOY evaluation consists of three parts:

- FY98 UIC grant workplan commitments and accomplishments
- FY99 UIC grant workplan issues
- Specific UIC program issues, including an evaluation of the 1998 interagency Agreement commitments designed to address specific deficiencies identified during the 1997 informal review of OCC's UIC primacy program

As mandated in the Safe Drinking Water Act, the Agency's oversight activities strive to assure that any State UIC program continues to implement the program "approved" by EPA. Toward that end, the Region is currently reviewing the draft program revision submitted by OCC's UIC staff on December 1, 1998, pursuant to our 1998 Agreement. Also, at the request of the Oklahoma Department of Environmental Quality (ODEQ), Regional representatives recently reviewed draft state UIC legislation (HB 1744) and provided verbal comment to both OCC and ODEQ staff on February 16, 1999. Our program and legal staff continue to evaluate the draft revision application and remain available to assist both state agencies with any UIC issues. We will provide comment on the draft revision application as soon as possible.

If you have any questions concerning the enclosed evaluation or any other program issues, please call me at (214) 665-7101 or contact Mr. Larry Wright at (214) 665-7150.

Sincerely yours,

William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: Tim Baker, OCC Pollution Abatement Manager
Larry Fiddler, OCC UIC Manager

**EPA REGION 6
END-OF-YEAR (EOY) REVIEW**

**Underground Injection Control (UIC) Program
Oklahoma Corporation Commission (OCC)**

**State Fiscal Year 1998 (FY98)
July 1, 1997 - June 30, 1998**

This annual review integrates the evaluation of activities associated with the FY98 Grant Workplan and additional program activities conducted pursuant to the portion of Oklahoma's State UIC program approved under section 1425 of the Safe Drinking Water Act (SDWA). The evaluation is presented in three sections in an effort to increase oversight feedback to the State:

- FY98 UIC grant workplan commitments and accomplishments
- FY99 UIC grant workplan issues
- Specific UIC program issues, including an evaluation of the 1998 interagency Agreement commitments designed to address specific deficiencies identified during the 1997 informal review of OCC's UIC primacy program

Background—In 1981, the EPA approved Oklahoma's primacy UIC program for Class II injection, i.e., injection activities intrinsically associated with oil and gas exploration and production as defined at 40 CFR §146.5. In 1995, Region 6 approved certain non-substantial changes in OCC's UIC program caused by the recodification of the General Rules of the Oil and Gas Conservation Division into the Oklahoma Administrative Code (OAC) Title 165, Chapter 10 effective December 31, 1991, and amendments to OAC Title 165, Chapter 10 for Class II commercial wells effective July 11, 1994.

During a 1997 review of OCC's UIC primacy program, several inconsistencies became apparent between the applicable UIC program approved by EPA and the State UIC program implemented by the OCC pursuant to State statutory authorities. Subsequently, a 1998 interagency Agreement offered both OCC and EPA an opportunity to address any statutory discrepancies as well as other problematic UIC issues. Pursuant to the 1998 Agreement, the OCC submitted to Region 6 a draft program revision for its Class II UIC program in December 1998. The draft revision application includes unapproved rule changes adopted since 1991 and other updated documents required under 40 CFR §145.32. OCC's draft application is currently under review by the Region.

In addition to the Class II program revision application, the Region has requested both OCC and the Oklahoma Department of Environmental Quality (ODEQ) to coordinate a review of

State UIC authorities granted by the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993, and provide the Region with a collaborative statutory interpretation of the effects on Oklahoma's UIC primacy program previously approved under SDWA section 1422 and 1425. Possible revisions to Oklahoma's UIC program for Class I, III and V activities or to Oklahoma Law may be necessary to resolve any apparent discrepancies in UIC authorities.

FY 98 GRANT WORKPLAN:

FY98 Grant Mid-Year Accomplishments—On April 17, 1998, a mid-year meeting was held between OCC and Region 6 staff to evaluate the OCC's performance in administering the Class II UIC program during the first half of FY98. State UIC program issues were also discussed, as well as comments pertaining to the status of specific commitments in the 1998 Agreement between OCC and Region 6. Subsequently, certain commitments and deadlines in the 1998 interagency Agreement were incorporated into the FY98 grant workplan, specifically part A. The commitments and deadlines for parts B and C of the Agreement have been incorporated into the FY99 grant workplan. The part A commitments were accomplished before the April 1, 1998, deadline described in the Agreement.

Although OCC staff provided comment on a draft mid-year evaluation, the Region did not finalize the mid-year review. Therefore, the major mid-year accomplishments and issues have been incorporated into this EOY evaluation. At mid-year, most workplan activities either exceeded or were within the expected completion range of 50%. The exception was Class II re-permitting which is dependant upon the number of re-permitting applications. The FY98 program activity target values, as well as the required deliverables and due dates, were re-evaluated and appropriately modified during FY99 grant workplan negotiations.

FY 98 Grant Award—The approved Federal FY98 allotment for the OCC's UIC program was \$395,508. An advanced distribution of \$40,000 was awarded in September 1997, for a special project to integrate existing electronic databases into a new data management system. The remaining funds for FY98 (\$355,508) were awarded in March of 1998, for regular programmatic UIC activities. The level of Federal funds normally distributed to each State UIC program is recalculated annually based on reported injection well inventory, geographic, and population parameters.

End-Of-Year Workplan Target Accomplishments—As stated in OCC's year-end narrative received on January 7, 1999, all workplan targets for permitting and compliance activities were either met or exceeded except those activities over which the State had no control, i.e., permit applications and transfers (see Table 1). Oklahoma's 1999 Class II inventory report cites 15,995 injection wells, including active and temporarily abandoned injectors. That number represents a reduction of 1,356 injection wells from the 1998 value of 17,351. A detailed discussion of OCC's Class II inventory is presented in the program portion of this evaluation.

Table 1. FY98 OCC UIC Grant Workplan Targets/Accomplishments for State UIC Program Activities.

State UIC Program Activity	FY 98 Target	FY98 EOY values	Target %
INSPECTIONS: On-site field	10,000	11,659	116%
Joint field (UIC staff)	48	178	370%
complaint related	95	108	113%
MITs–total	2,500	2,985	119%
witnessed MITs	2,250	2,985	132%
Compliance reviews–total	2,000	2,456	122%
commercial operations	220	220	100%
Complaint investigations	300	322	107%
PERMITS: Permits issued–total	540	410	76%
re-permits	120	36	30%
Technical reviews	600	623	103%
Permits ownership transferred	1,600	986	61%
HEARINGS: Public hearings	75	82	109%
Staff attended public hearings	15	33	220%
Technical conferences held	60	82	136%

Deliverables–The quarterly Significant Non-Compliance (SNC) reports, required in workplan task 620 and the UIC violation summaries required in workplan tasks 600 and 610, were not received by the Region. The summaries of UIC violation summaries are due semi-annually, each January 1 and June 30, and should summarize the State’s responses to UIC violations including details of timing and resolution. The quarterly SNC reports should include basic information about the operator, the nature of the violation, the corresponding enforcement action, the frequencies of non-compliance, and the current status of OCC actions and operator compliance determined by OCC’s tracking system. The submission of the required Federal Reporting Forms 7520, including Form 7520-2B (Compliance Evaluation Significant Noncompliance) and Form 7520-4 (Exceptions List), is a separate workplan requirement under task 620. The data fields of

the 7520s do not include all of the information requested in the SNC reports or the UIC violation summaries described above.

In addition, most of the quarterly 7520 reports have not been submitted in a timely manner. Once received and reviewed for accuracy, the submitted 7520s contained many errors in the reported numbers and/or data fields, requiring the Region to request amendments. For example, a discrepancy continues to exist between the number of wells with SNC violations and the number of wells with SNC violations returned to compliance reported on Form 7520-2B, as well as the number of exceptions reported on Form 7520-4. The Exceptions List (Form 7520-4) is a quarterly report used to track wells previously reported in SNC on Form 7520-2B for two or more consecutive quarters without being addressed with formal enforcement action or returned to compliance.

Table 2. FY98 OCC UIC Grant Workplan Due Dates and Status for State UIC Program Deliverables as of end-of-year 6/30/98.

Grant Deliverable	Due Date	Date Received
Quarterly Reports (Forms 7520)	as required	all submitted †
FY99 Draft Grant Workplan/Application	June 1, 1998	July 10, 1998
FY99 Final Grant Workplan/Application	August 1, 1998	December 1, 1998
Annual QMP/QAPP Updates*	June 1, 1998	June 22, 1998
SNC Violation Summary (Task 620)	Quarterly	Not Received
UIC Violation Summaries (Tasks 600,610)	1/1/98 6/30/98	Not Received
Annual UIC Program Report (FY98)	July 30, 1998	January 7, 1999
UIC Regulatory/Statutory Update	July 30, 1998	December 1, 1998

† Although received, most 7520s were submitted late and contained errors requiring correction.

*The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) are updated annually for tracking any program modifications, concurrences, and/or organizational changes.

FY99 GRANT WORKPLAN ISSUES:

FY99 Grant Workplan Revisions—Negotiations for the FY99 grant workplan were initiated during the mid-year evaluation conference on April, 17, 1998. After additional discussion sessions regarding FY98 workplan accomplishments, target shortfalls, and incorporation of items listed in the signed Agreement between the Region and OCC, consensus was reached to include the following revisions to the FY99 workplan:

The applicable commitments and associated deadlines (parts B and C) of the 1998 interagency Agreement were incorporated into the final FY99 grant workplan. The target for the number of joint field inspections was increased from 24 in FY97 to 48 in FY98. Joint field inspections are typically performed by a team of several field inspectors and several UIC staff members from the Oklahoma City office. The one-day “sweeps” are designed to determine compliance of a large number of injection wells within the targeted area or county in one of the four UIC State Districts. Although the “sweeps” ultimately determine regulatory compliance, another objective of the inspections is to increase cooperation between field and office personnel as well as support and enhance specific field inspection activities. Since the results of the “sweeps” are also tracked in the number of on-site field inspections, the number of joint field inspections will be dropped as a Grant Workplan target in FY99. However, the FY99 target for mechanical integrity tests (MITs) and compliance reviews will be increased to 3,000, up from the FY98 values listed in Table 1 above. This increase represents a target closer to 20% (one-fifth) of the actual number of Class II injection wells reported. The MIT and compliance review target will be adjusted in FY2000 based upon more accurate OCC inventory numbers. These increases reflect movement toward closer compliance with the 5-year MIT and compliance review criteria in EPA UIC “effectiveness” guidance documents [46 FR 27333, May 19, 1981, and UIC Guidance #64, February 23, 1989]. This issue is expanded in the Class II well inventory/MITs discussion.

Quality Assurance Annual Update—It is both a regulatory requirement and policy of EPA that all environmental programs conducted on behalf of EPA will establish and implement effective Quality Systems. EPA requires that all organizational units document their systems in a Quality Management Plan (QMP). The QMP must also be submitted and approved prior to approval of grant funding. It is also a regulatory requirement that all projects and tasks involving environmentally related measurements shall have a Quality Assurance Project Plan (QAPP). The project’s QAPP must be approved by the Agency prior to conducting any such measurement activities. The QMP and QAPP must be updated annually and EPA requires each state to certify that both plans are current by annually submitting updated signatory pages. Toward this goal, OCC has agreed to incorporate the Agency’s Quality Assurance (QA) update requirements into its annual application/workplan submission to EPA beginning in FY99. Incorporation into the UIC workplan will ensure that the approved QA documents will correspond with the OCC’s project period, i.e., the State’s FY, rather than the Federal FY. OCC’s current QAPP expires April 2, 1999. Because OCC originally prepared and submitted a 1998 QMP following the outdated QAMS 002/80 guidelines, the Regional Quality Assurance Office agreed to extend the usual QMP deadline requirement. An amended QMP, prepared following the new EPA QA/R-2 guidelines, was re-submitted by OCC on June 22, 1998, and was approved January 12, 1999.

FY99 UIC Grant Allocations—The tentative grant allocation for OCC in FY99 is \$366,500. This allocation amount reflects a decrease of \$29,008 from the FY 98 funding level of \$395,508. This decrease was due to a FY 98 Class II inventory total of 17,351 wells which decreases the total by 2,322 wells from the FY97 inventory total of 19,673. Since the installation of OCC’s new Data Management System, the number of active, temporarily abandoned, and plugged wells have been greatly reduced, and an even more accurate inventory number is expected once complications with the system have been fully evaluated and corrected.

Class II Well Inventory/MTs—In addition to the SNC/Exceptions concerns discussed previously, a discrepancy is also apparent between the reported inventory numbers and number of mechanical integrity tests (MTs) conducted since 1992 (see Table 3 below). Initial MTs are generally required for any type of injection well, with subsequent MTs conducted at least every 5 years for Class II wells. Between 1992 and 1996, OCC reported approximately 19,500 active and 2,000 temporarily abandoned (TA) Class II injection wells—a total average inventory of approximately 22,000 wells. During that same period, OCC reported performing MTs on approximately 14,000 injection wells. Assuming an inventory of 22,000 wells, approximately 4,400 MTs could be expected each year during a 5-year MT cycle. If OCC tested only the active wells, assuming the mechanical integrity of TA injection wells remained constant, one could expect 3900 annual MTs for the same period. Between 1992 and 1996, OCC reported an average of only annual 2700 MTs, far less than 20% (one-fifth) of the reported active well inventory. Even though the number of MTs historically conducted have not met guidance standards, the corresponding grant workplan targets were approved by Region 6. In an effort to move toward compliance with the 5-year MT requirement, a target of 3000 MTs has been adopted in the FY99 workplan.

In program discussions with OCC UIC staff, the Region learned that the new Data Management System is currently not designed to distinguish between active and temporarily abandoned (TA) injection wells. Since all State UIC programs are required to report both types of wells in addition to wells which have been plugged, the Region highly encourages OCC to modify its data management system to track TA wells. This issue is also related to assuring operator compliance with annual monitoring reporting requirements. If an injection well operator has not reported, the data management system should be able to flag the operator as non-compliant, resulting in appropriate enforcement action. Through proper enforcement action, OCC could determine if the well is no longer needed as an injector or if the operator has abandoned the well altogether. In either case, the well should then be tracked as TA until adequately plugged. Once plugged, the well would be reported as plugged on EPA Forms 7520 and on the annual inventory report. From the values in Table 3, problems in tracking TA and plugged wells have existed at least since 1992, and possibly longer. OCC's new Data Management System does not track TA injection wells because OCC rules do not allow a method to classify a Class II well as temporarily abandoned. OCC's rules do require inactive Class II injection well operators to file annual monitoring reports and demonstrate mechanical integrity at least every five years.

A discrepancy between the number of wells reported plugged on Forms 7520 and the cumulative number of wells plugged on the annual inventory report is also apparent. Between 1992 and 1998, OCC reported 637 wells plugged on Forms 7520, while the corresponding cumulative value was not reflected in the annual inventory reports. The cumulative values for plugged and abandoned (P&A) wells actually decreased between 1996 and 1998, while OCC reported 264 wells plugged during that time. OCC is urged to modify its new Data Management System to determine an accurate inventory of all Class II wells in Oklahoma and to track active, TA, and P&A activities associated with those wells. A complete and accurate inventory is essential for an "effective" UIC program and also affects allocation of Federal UIC funds. The

reporting errors mentioned earlier could also be addressed through modifying the new Data Management System to track each data field required to be reported on Forms 7520.

Table 3. Annual inventory of Class II injection wells with the number of new permits, wells plugged, and wells tested for mechanical integrity (MITs) as reported by OCC from 1992 through 1998.

Inventory Year	Funded Inventory	Active Wells	TA wells	P&A wells	Wells Plugged (7520-3)	New Wells Permitted (7520-1)	MITs (7520-3)
	(active+TA)			(cumulative)			
1998	15,995	15,994	1	5,409	8	387	2,667†
1997	17,351	13,878	3,473	4,576	117	494	3,148
1996	22,253	19,781	2,472	7,056	139 *	392	3,284
1995	21,593	19,393	2,200	6,811	0	344	2,237
1994	21,542	19,482	2,060	6,674	212	470	2,509
1993	21,350	19,345	2,005	6,497	150	590	2,533
1992	21,658	19,465	2,193	6,018	11	468	3,083
SUBTOTAL ('96-'92)	--	--	--	--	(512)	(2,264)	(13,646)
TOTALS ('98-'92)	--	--	--	--	637	3,145	19,461
1987	22,792	20,969	1,823	3,885	--	--	--

† On 11/4/98, UIC manager verbally reported 2,409 MITs for FY98.

* 1996--All wells with remedial action (includes wells plugged)

NOTE: Inventory values taken from OCC inventory reports; other values taken from EPA Forms 7520 submitted by OCC. In 1997 and 1998, OCC's injection well inventory decreased.

PROGRAM ISSUES:

Reviews of State UIC Programs—As stated at 46 Fed. Reg. 27333, 27337 (May 19, 1981), Class II UIC State programs authorized under section 1425 of the Safe Drinking Water Act (SDWA) are required to demonstrate that the program in fact “represents an effective program to prevent underground injection which endangers drinking water sources.” Region 6 is currently conducting primacy program reviews to determine the “effectiveness” of State Class II programs, pursuant to SDWA section 1425, and the “equivalency” of State UIC programs for Class I, III and V injection wells under SDWA section 1422. A thorough evaluation of Oklahoma’s Class II UIC program was completed in December 1997, resulting in an interagency Agreement which provided an opportunity to address the program deficiencies identified in the program review.

1998 Agreement—The Agreement between EPA Region 6 and the OCC was developed and adopted to address issues raised during the 1997 program review. The Agreement delineates specific commitments and timetables developed and approved by both agencies. Although the OCC’s annual narrative states that “OCC was able to meet these deadlines and all commitments were accomplished in a timely manner”, additional action is required before effective resolution. An update on the current status of each Agreement commitment is presented below:

➡ Before April 1, 1998:

- **Draft Action Plan**—A draft action plan (Attachment A) was submitted on March 20, and finalized on April 2, 1998 (Agreement, item A.2). This plan served as a template during frequent interagency discussions at the program level. The discussions focused on the problematic issues identified in the 1997 informal program review and offered the staff of both agencies additional understanding of those issues. However, some major issues remain unresolved, e.g., area of review/corrective action.
- **New Data Management System**—The OCC’s new data management system (DMS) was installed prior to the April 1 target (Agreement item A.1). Since April 1, the Region evaluated the status of DMS on two separate occasions, April 15 and June 24, 1998. The following Regional evaluation comments (Agreement item B.7) were previously provided to OCC staff on August 7, 1998, for comment in a draft FY98 mid-year evaluation:

“As of the June 24th program visit, the merge of the Compliance/Enforcement database with the Inventory database was 80-90% complete. The merge of the MIT database was approximately 50% complete. 100% merge of all databases is expected before October 1, 1998. An increase in compliance assurance activities is anticipated following the completed merges. A general lack of compliance tracking was a deficiency identified in the 1997 informal program review.

A major deficiency identified in the 1997 program review was operator compliance with submission of annual monitoring reports. Currently, OCC regulates approximately 3,800 Class II well operators. During the June 24th visit, the State program reported approximately 7,000 annual monitoring reports (OCC

form 1012) had been received, with about 2,600 of those forms being entered into OCC's DMS. The number of wells represented by the 7,000 monitoring reports was not known. Approximately 700 forms had been returned to the operator for correction, and about 500 of those returned had been re-submitted with the appropriate corrections. After processing all of the 1012s received, an accurate number of non-compliant operators and wells can be identified. This is anticipated by September 1, 1998. Following that determination, the OCC staff intends to seek compliance with a notice of violation letter, followed with a compliance order if necessary."

Although identified by EPA in the 1997 review of OCC's primacy program, OCC had previously recognized the non-reporting problem and had moved to develop and install the new Data Management System prior to EPA's program review. Since the Agency's draft FY98 mid-year evaluation was generated, OCC staff have continued their efforts to collect and process annual monitoring reports. In mid-November 1998, OCC staff reported processing annual monitoring reports representing about 9,112 wells, with an additional 1500 reports awaiting DMS processing. In mid-December 1998, the annual monitoring reports received by OCC represented approximately 8,655 Class II injection wells out of a reported inventory of 16,062 active injection wells—an estimated 54% operator compliance with annual reporting regulations. The EPA generally considers compliance values less than 90% unacceptable. The data management transition has helped identify many duplications within OCC's well records. These duplications may be reflected in apparent inaccurate well inventory values. OCC continues to refine the Class II inventory and plans to seek operator compliance with reporting requirements through timely and appropriate enforcement actions.

➤ **Before August 1, 1998:**

- **FY99 Enforcement Agreement**—The Region's Compliance Assurance and Enforcement Division (6EN) is Regional lead in the development of the FY99 UIC Enforcement Agreement between OCC and Region 6. Negotiations between OCC UIC staff and 6EN Water Enforcement staff have continued far beyond the August 1, 1998 deadline for commitment B.5. A draft enforcement agreement was submitted by OCC in July 1998. A final enforcement agreement is pending a response by Region 6.
- **Other August 1, 1998, Commitments**—Numerous teleconferences between OCC and Region UIC staff have provided valuable dialogue on many programmatic issues including the permit application process, operating requirements, closure, and permit compliance (Agreement items B.1, B.2, and B.3). The dialogue has enabled both staffs to better understand the issues. However, many issues have not yet been resolved at the staff level. The Region anticipates that the unresolved issues will be addressed through the approval process associated with OCC's program revision submission (Agreement item C.1).

The region received only one addendum to the quarterly 7520 reporting (Agreement item B.3) in 1998 which included vacating orders for several long-standing temporarily abandoned injection wells. This issue was a topic of controversy because current OCC orders imply the loss of authorization “shall” result from non-compliance with OCC regulations. No orders have been received which terminated authority to inject because of operator non-compliance with regulations. However, OCC has submitted some orders which were terminated because of historical inactivity.

On September 21, 1998, OCC staff originally submitted an Area of Review evaluation of 15 injection wells (8 non-commercial injectors and 7 commercial injection wells), as a representative sample of injection wells permitted since 1991 (Agreement, item B.4). Since the non-commercial wells were all permitted in 1998 and the Area of Review for commercial wells has not changed since primacy, the sample was deemed non-representative of permitting practices used since the last approved changes in OCC’s UIC program. During a conference call with OCC staff on October 1, 1998, the Region’s UIC staff requested OCC to evaluate an additional sample of 30 randomly selected non-commercial injection wells authorized between 1992 and 1997. The evaluation of the expanded sample has yet to be received by the Region.

The State UIC program has reviewed its staffing needs and anticipates no immediate changes (Agreement, item B.6). Item B.6 stated that the OCC would evaluate current staff assignments and propose a plan to address any current and/or future staffing deficiencies. This information was transmitted verbally during one of numerous conference calls between respective UIC staff.

The Region’s evaluation of OCC’s data management system (Agreement item B.7) is discussed above with the new Data Management System (Agreement item A.1). The evaluation was transmitted in the draft FY98 mid-year evaluation on August 7, 1998.

Resolution of Agreement item B.8 was originally delayed beyond the August 1, 1998, deadline because of pending Regional Counsel review of the issue. Item B.8 committed Region 6 and OCC to develop a draft plan to alleviate any conflicts between Federal UIC authority and State authority for brine injection granted to OCC by the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. This issue has been discussed thoroughly at the UIC staff level with both OCC and ODEQ without resolution and is further discussed below, i.e., brine authority.

➤ **Before December 1, 1998:**

- **Program Revision Submission**—Pursuant to item C.1 of the 1998 Agreement, on December 1, 1998, the Region received a draft program revision application for Oklahoma's Class II UIC program. The draft revision application was submitted to initiate modifications to that portion of the State UIC program approved under SDWA section 1425. Since the application is currently considered a draft, therefore incomplete, the formal approval process and associated time constraints required at 40 CFR §145.31 are not considered applicable until the revision application is deemed final and complete. The Region is currently reviewing the draft application and will provide comments to OCC as soon as possible. The Region will continue to cooperate with the State program in this revision effort and in any future program revision applications.

The approval/denial procedures are both statutory and regulatory. If any State UIC program revision is approved by EPA, normal Agency protocol is to incorporate the revision into the Code of Federal Regulations (CFR). However, if EPA determines that a program revision is insufficient in meeting SDWA UIC requirements, a formal review may be necessary to determine the validity of the state's UIC demonstration. Upon disapproval, SDWA section 1422 (c) requires the Administrator to prescribe an applicable UIC program which meets the requirements of section 1421(b). Any UIC program withdrawal proceedings also include public participation and appropriate rule making. Pursuant to SDWA directives, the applicable Federal regulations for approving or disapproving State UIC program revisions are found at 40 CFR §145, subpart D.

- **Area of Review**—In OCC's UIC original primacy program application, the Area of Review (AOR) for a Class II injection well was defined as a circle with a radius of ½-mile, with corrective action required within an appropriately calculated zone of endangering influence (ZEI). In 1992, the OCC reduced the AOR radius to ¼-mile by modifying its regulations and currently uses a ZEI calculation only to reduce corrective action within a ¼-mile radius of the injection well, even if the ZEI indicates pressure effects beyond a ¼-mile radius. Agreement item C.2 was adopted to address this issue. By fax on May 19, 1998, the Region transmitted to OCC a memo dated May 15, 1998, in which Regional Counsel determined that the 1992 modification of the AOR radius was not part of the approved State UIC program. This rule change continues to be a topic of considerable debate at the staff level, as OCC continues to use the ¼-mile AOR in its current permit review/issuance process. The ¼-mile AOR criteria and permitting process is included as part of OCC's 1998 draft program revision. In addition to reviewing the draft program revision, the Region is consulting with EPA Headquarters on this specific issue.
- **Brine Authority**—Agreement item C.3 called for the development of a final plan to alleviate apparent conflicts between State and Federal UIC authority related to brine injection. Because of the complexity of this issue, in separate letters dated January 11, 1999, the Region formally requested both State agencies to provide a corroborative statutory interpretation of State statutory authorities and their affect on the EPA approved

State UIC primacy programs. Following EPA review of the State's statutory interpretation, an appropriate plan will be developed to address the issue. Possible alternatives may include revising that part of Oklahoma's UIC program authorized under SDWA section 1422 and/or the modification of the relevant State statutes.

Plugging Moratorium (SB 1010)—The Region requested and received an interpretation from OCC staff on the effect of the 1998 moratorium on requiring oil and gas wells to be plugged when the price of crude oil in Oklahoma is less than \$15.00 per barrel. Although OCC has determined that Oklahoma's Senate Bill (SB) 1010 will not affect its UIC program, Regional Counsel has been asked to review OCC's interpretation of SB 1010 and provide comment on any potential affects on UIC corrective action requirements.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

APR 1 2000

FY99

Mr. Michael S. Battles, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

APR 1 2000

Dear Mr. Battles:

The enclosed report summarizes EPA's evaluation of the performance of Oklahoma's Class II Underground Injection Control (UIC) program during Fiscal Year 1999 (FY99). Some suggested changes received during telephone conversations with the State UIC program on March 1 and 22, 2000, are included in this final end-of-year evaluation. The Region's FY99 evaluation consists of three parts:

- FY99 UIC grant workplan commitments and accomplishments
- Fiscal Year 2000 (FY00) UIC grant workplan issues
- Specific UIC program implementation issues

Oklahoma Corporation Commission (OCC) staff have either met or exceeded most of the FY99 UIC grant workplan commitments. However, the number of Mechanical Integrity Tests (MITs) performed and witnessed MITs are below the workplan targets. Since all Class II injection wells must demonstrate mechanical integrity at least once every five years, the current targets for these field activities may need revision during FY00. In addition, quarterly and semi-annual violation summaries required in the grant workplans for FY98 and FY99 have not been submitted. The Region anticipated using those violation summaries to further evaluate the effectiveness of OCC's UIC enforcement actions. A list of wells undergoing some degree of enforcement action was provided as an addendum to the State program's annual report, but does not provide enough information to address current oversight concerns.

Our shared primary objective is an expeditious resolution of all outstanding UIC issues associated with the implementation of Oklahoma's Class II UIC program. In addition to the MIT and enforcement reporting items mentioned above, other issues include:

1. Area of review/zone of endangering influence in permitting;
2. Brine injection authority;
3. Management of temporarily abandoned wells;
4. Operator annual monitoring reports; and
5. Public participation in permitting.

Internet Address (URL) • <http://www.epa.gov>

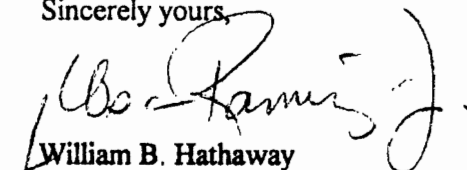
Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 25% Postconsumer)

The end-of-year evaluation also provides an update of several unresolved commitments from our 1998 Agreement. Our oversight approach continues to be one of cooperation with the State program. However, if our cooperative strategy fails to resolve the issues, our only option appears to be a formal determination of the "effectiveness" of OCC's UIC program.

Item C.1 of our 1998 Agreement provided OCC with an opportunity to submit a draft program revision package. OCC staff submitted the State program's draft revision to Region 6 in December 1998. Since that time, we have reviewed and worked to resolve several implementation issues related to OCC's draft program revision. We anticipate providing substantial comment on the draft revision to the State program by mid-year 2000.

We look forward to strengthening the UIC partnership between Region 6 and OCC as we strive to resolve some very difficult groundwater protection issues cooperatively. If you have any questions, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Phil Dellinger at (214) 665-7165, or Mike Frazier at (214) 665-7236, if they have questions or need assistance in addressing any end-of-year evaluation issues.

Sincerely yours,



William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: Tim Baker, OCC Pollution Abatement Manager
Larry Fiddler, OCC UIC Manager, w/enclosure

EPA REGION 6 END-OF-YEAR REVIEW
OKLAHOMA CORPORATION COMMISSION (OCC)
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

State Fiscal Year 1999 (FY99)
July 1, 1998 - June 30, 1999

This report details the evaluation of activities and accomplishments of the Oklahoma Corporation Commission (OCC) toward meeting the FY99 UIC grant workplan commitments between July 1, 1998 and June 30, 1999, and the implementation of the applicable State UIC program approved by EPA. On September 22, 1999, an end-of-year conference call was conducted between Mr. Larry Fiddler, OCC UIC manager, and Ms. Kathy Ketcher and Mr. Mike Frazier of EPA Region 6. This review is presented in three sections in an effort to enhance oversight feedback to the State:

- FY99 UIC grant workplan commitments and accomplishments
- Fiscal Year 2000 (FY00) UIC grant workplan issues
- Specific UIC program implementation issues

FY99 GRANT WORKPLAN:

FY99 Grant Award - The approved Federal FY99 allotment for the State of Oklahoma's Class II UIC program administered by the OCC is \$366,500. The OCC was awarded 100% of that allotment in March of 1999.

FY99 Grant Deliverables—State program deliverables required during FY99 are identified in Table 1. All deliverables have been submitted to Region 6 as required in the grant workplan except for the significant non-compliance (SNC) and UIC violation summaries. The State UIC program also failed to submit these violation summaries during FY98. The SNC and UIC violation summaries allow the Region to track and evaluate OCC's enforcement activities, especially enforcement related to operator non-compliance with annual monitoring reporting requirements (OCC form 1012), a major deficiency identified in the Region's primacy program review. The last quarterly report (7520s) and the annual program report (narrative) were submitted after the target date. The Region's Enforcement and Compliance Division continues to evaluate and finalize the draft enforcement agreement between OCC and Region 6.

Table 1. FY99 Grant Deliverables.

Grant Deliverable	Due Date	Date Received
Quarterly Reports (Forms 7520)	As required	due Jan. 30, Apr. 30, July 30 and October 30; received Feb. 3 , Apr. 30, July 23 and Nov. 23
FY00 Draft Grant Workplan/Application	May 1 - June 1, 1999	July 1999
FY00 Final Grant Workplan/Application	August 1, 1998	August 10, 1999 approved August 23
Annual QMP/QAPP Updates	QMP Jan. 12, 1999 QAPP April 2, 1999	QMP January 12, 1999 QAPP May 20 , 1999
SNC Violation Summary	Quarterly, as required	None received in Oct. 1998, Jan., Apr., or June 1999, or in FY98. †
UIC Violation Summaries (Tasks 600,610)	1/1/99 6/30/99	None received in FY99, nor in FY98. †
Annual UIC Program Report (FY99)	July 30, 1999	Received Dec. 3, 1999, Revised Dec. 27, 1999 †
Final Financial Status Report (FY98)	September 30, 1999	October 15, 1999
Annual UIC Enforcement Agreement	May 1 of each year with draft workplan submission	Agreement previously submitted May 1, 1998, 6EN approval is pending
UIC Annual Inventory	Annually as requested by EPA	Requested Dec. 1, 1999 Received Dec. 27, 1999
UIC Regulatory/Statutory Update	July 30, 1999	Received Dec. 3, 1999

† List of wells in various enforcement stages listed in amended Annual UIC narrative received 12/27/99. Date and nature of violation or specific enforcement actions taken not listed.

Data Management System Status/Update—During FY99, OCC completed converting its Class II database to a new Oracle relational data-based data management system. OCC has advised Region 6 that all computer systems are now fully operational and are functioning normally. The new system allows the State UIC program to evaluate individual injection well history and verify compliance with UIC rules. The old system was not only cumbersome to use, but also contained inaccurate records and inventory values. Following conversion to the new system, OCC staff have been able to eliminate a large volume of historical inaccuracies and duplications in the UIC electronic database. The new data management system is also being used to evaluate and track compliance with OCC rules and regulations, including the operator's compliance with annual reporting and mechanical integrity requirements.

During FY99, OCC's Oil and Gas Division initiated field activities in each of OCC's four operational districts to locate, identify, inspect, and verify all active or inactive Class II injection wells under OCC jurisdiction. The primary goal of this initiative is to generate an accurate inventory of Class II injection wells. These "inspection sweeps" were anticipated to be completed before November 1999, at which time an inventory with "99%" accuracy was expected. OCC staff provided Region 6 with an "up-to-date" inventory of authorized Class II injection wells on December 27, 1999, and that value is depicted in Tables 3 and 4 of this evaluation. Maintaining a complete and accurate inventory is essential for an effective State program. The annual well inventories are used to allocate basic Federal funding for all State UIC programs.

Program Workplan Accomplishments and End-of-Year Shortfalls—At mid-year, most field activities exceeded the expected completion range of 50% with the exception of total Mechanical Integrity Tests (MITs), witnessed MITs, and the number of permits issued. However, OCC staff were unsure why the mid-year percentages were only 32% for MITs and 36% for witnessed MITs of the target values, but proposed to investigate the unexpected mid-year shortfalls in FY99 during planned visits to individual district field offices. The number of permits issued, ownership transfers, and number of public hearings are primarily determined by the number of applications, therefore, the end-of-year shortfalls in those tracked UIC activities are independent of OCC staff activities. The FY99 workplan targets for State UIC Program activities and the level of accomplishment for those tracked activities are presented in Table 2.

The target for total MITs was increased in FY99 to assure that all Class II injection wells in Oklahoma meet the regulatory testing requirement. Federal and State regulations at 40 C.F.R. §146.23(b)(3) and OAC 165:10-5-6(d)(1) require operators of Class II injection wells to verify mechanical integrity at least once every five years. The end-of-year percentages for total MITs and witnessed MITs are 24% and 15% below the FY99 target, respectively, and OCC staff indicated during the end-of-year discussions that a backlog exists in scheduling MITs in some districts. OCC should re-evaluate its field activity priorities and data base tracking procedures to assure that all Class II wells meet the MIT regulatory requirements of OAC 165:10-5-6.

Even though the total number of MITs is below the targeted value for FY99, OCC strives to witness all five-year MITs as required in OAC 165:10-5. OCC staff witnessed all of the 2,283 MITs performed in FY99. EPA's Class II program guidance [46 Fed. Reg. 27333, 27337, May 19, 1981] states, "An adequate program should insure that, at a minimum, 25% of all mechanical integrity tests performed each year will be witnessed by a qualified State inspector." OCC's regulation and corresponding field inspections greatly exceed that inspection standard.

Table 2. Program activities, FY99 targets, end-of-year values and percent accomplished.

Program Activity	FY99 TARGET	End-of-Year Values	Target %
INSPECTIONS (On-site)	10,000	16,290	163
(Complaint Related)	95	107	113
MITs (Total)	3,000	2,283	76
(Witnessed)	2,700	2,283	85
COMPLIANCE REVIEWS (total)	3,000	4,394	146
(commercial operations)	226	229	101
(complaint investigations)	300	325	108
PERMITS (Total Issued)	500	358 †	71
TECHNICAL REVIEWS	500	598	120
OWNERSHIPS TRANSFERRED	1,200	1,060 †	88
PUBLIC HEARINGS	75	67 †	89
(Staff attended public hearings)	15	27	180
TECHNICAL CONFERENCES	60	76	127

† Values determined by number of operator applications and requests for public hearings.

The State UIC program reported 325 compliance reviews related to complaint investigations during FY99. Approximately one-third of those compliance reviews included an on-site inspection of a Class II injection activity (107 total). An on-site inspection of every complaint is not a requirement according to OAC 165:5-1-27. However, any complaint outside OCC jurisdiction is referred to the appropriate State or Federal environmental agency, and those complaints within OCC jurisdiction are referred to the appropriate division of the Commission for reasonable and sufficient investigation to determine whether or not a response action(s) should be initiated. A response action may or may not include an on-site inspection.

Table 3 compares the number of Class II MITs performed with OCC's reported inventory of Class II wells from 1991 through 1999. An apparent discrepancy exists between the reported annual well inventory and the number of mechanical integrity tests (MITs) performed during any 5-year period since 1991. This discrepancy was first pointed out on page 6 in the FY98 end-of-year evaluation. Subsequently, the State program agreed to increase the MIT target for FY99 from 2,500 to 3,000 MITs based on the 1998 inventory of 15,995.

The average annual number of Class II MITs reported by OCC for the 9-year period between 1991 and 1999 is 2,825. Based on that annual average (2,825 MITs per year), at most approximately 14,125 Class II injection wells could be expected to be tested for mechanical integrity during a 5-year MIT cycle. In December 1999, OCC reported an inventory of 15,610 Class II wells. Therefore, at minimum, approximately 1,500 Class II wells in Oklahoma do not meet the 5-year mechanical integrity regulatory requirement, roughly 10% of the reported 1999 inventory. However, based upon the reported 1996 inventory of 22,253 injection wells and the number of MITs performed during the last five years—13,741, as many as 8,000 wells could be non-compliant with the 5-year MIT requirement.

The historical discrepancies between the reported annual Class II well inventories of active, temporarily abandoned and plugged injection wells also need attention. Table 4 presents reported annual inventories of Class II injection wells operating under OCC's UIC authority and the number of injection wells plugged, new wells permitted and MITs performed between 1992 and 1999. OCC's Class II well inventory has decreased by over 6,000 injection wells since 1996, even though the State UIC program reported permitting over 2,000 new injection wells since 1995. OCC attributes this approximate 8,000 well variance (30% of the largest reported inventory of 1996) to the inefficiency of an outdated data management system and insufficient program initiatives to identify and resolve historical duplication of well records. To address this issue during FY99, the State UIC program initiated field activities to verify the status of every permitted Class II injection well under its jurisdiction. Further scrutiny of the State's MIT records could identify those injection wells that have not been tested for mechanical integrity within the last five years and possibly identify abandoned wells that need to be properly plugged.

From Primacy through 1997, OCC reported 2-3,000 inactive (temporary abandoned) Class II injection wells. EPA UIC Guidance #78 states that operators of abandoned Class II injection wells should continue to submit annual monitoring reports and to test for mechanical integrity until the wells are properly plugged to ensure that abandoned wells do not act as pathways for fluids to move from the injection zone. In 1997, OCC reported a net decrease of approximately 5,000 injection wells without accounting for the plugging of those wells. In that inventory, OCC reported 13,878 active and 3,473 inactive injection wells. In subsequent inventories in 1998 and 1999, the State program reported one and zero inactive wells, respectively. Because the number of active wells for 1997 match closely the number of 5-year mechanical integrity tests conducted since 1995, please advise us if the operators of about 3,500 inactive injection wells (as reported in 1997) were required to conduct MITs. Additionally, please advise us whether the approximately 3,500 inactive injection wells were removed from the

State UIC well inventory without further tracking or plugging.

In 1999 correspondence concerning the 1998 SB 1010 plugging moratorium and later in this report, the Region thoroughly presents the UIC regulatory and guidance standard for tracking and plugging abandoned injection wells. The plugging and tracking requirement is designed to prevent the movement of fluids into or between underground sources of drinking water (USDWs) through abandoned injection wells. The Region plans to resolve this issue during FY00 through its response and comments to OCC's draft program revision submission.

If one assumes that the reported inventory for 1999 is accurate, approximately 2,000 permitted injection wells have not demonstrated mechanical integrity during the last five years [15,610 injection wells and only 13,582 MITs performed since 1995]. Between 1996 and 1997, the reported cumulative number of plugged injection wells actually decreased by about 2,500 wells, even though the State UIC program reported plugging 391 injection wells since 1995. Because of these large discrepancies in the numbers of authorized Class II wells, injection wells plugged, and MITs conducted, Region 6 oversight personnel have questions about the effectiveness of Oklahoma's Class II UIC program in several areas:

- ▶ Does the 1999 reported UIC inventory represent an accurate number of Class II injection wells under OCC authority?
- ▶ Does the State UIC program adequately track Class II injection wells to assure proper plugging, and if not plugged, does the State program require operators to monitor and test inactive or former injection wells to assure USDWs are adequately protected?
- ▶ Does the State UIC program effectively require injection well operators to meet the 5-year mechanical integrity testing standard?

Table 3: Number of Class II MITs (2-part) conducted between FY91 and FY99, annual inventory, and well variance between number of five-year MITs and annual inventory.

Fiscal Year	‘91	‘92	‘93	‘94	‘95	‘96	‘97	‘98	‘99
MITs (2-part) †	3,135	3,418	2,533	2,595	2,945	3,284	2,244	2,985	2,283
Cumulative 2-part MITs (5-year cycles)	3,135	6,553	9,086	11,681	14,626	--	--	--	--
	--	3,418	5,951	8,546	11,491	14,775	--	--	--
	--	--	2,533	5,128	8,073	11,357	13,601	--	--
	--	--	--	2,595	5,540	8,824	11,068	14,053	--
	--	--	--	--	2,945	6,229	8,473	11,458	13,741
Well Inventory ♦ (maximum and minimum in bold)	--	21,658	21,350	21,540	21,593	22,253	17,351	15,995	15,610
Difference between Class II Well Inventory and Cumulative 5-year MITs	—	—	—	—	(6,967)	(7,478)	(3,750)	(1,942)	(1,869)

† MIT values as submitted in end-of-year program evaluations.

♦ Injection well inventory as reported by OCC annually; used in UIC funding formula.

Table 4. Annual inventory of Class II injection wells with the number of new permits, wells plugged, and wells tested for mechanical integrity (MITs) as reported by OCC between 1992 and 1999.

Inventory Year	Class II Well Inventory <input checked="" type="checkbox"/>	Active Wells	TA Wells	P&A Wells	Wells Plugged (7520-3)	New Wells Permitted (7520-1)	MITs (7520-3)
	(active+TA)			(cumulative)			
1999	15,610	15,610	0	5,560	127	457	2,246
1998	15,995	15,994	1	5,409	8	387	2,667
1997	17,351	13,878	3,473	4,576	117	494	3,148
1996	22,253	19,781	2,472	7,056	139 *	392	3,284
1995	21,593	19,393	2,200	6,811	0	344	2,237
Subtotals ('95-'99)	--	--	--	--	391	2,074	13,582
1994	21,542	19,482	2,060	6,674	212	470	2,509
1993	21,350	19,345	2,005	6,497	150	590	2,533
1992	21,658	19,465	2,193	6,018	11	468	3,083
TOTALS ('92-'99)	--	--	--	--	764	3,602	21,707
1987	22,792	20,969	1,823	3,885	--	--	--

☒ UIC grant funding based on total number of Class II wells.

* 1996–All wells with remedial action (includes wells plugged)

NOTE: Inventory values taken from annual OCC inventory reports; other values taken from EPA Forms 7520 submitted by State program.

FY00 WORKPLAN NEGOTIATIONS:

Quality Assurance Annual Update—The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) must be updated annually. If both the QMP and QAPP are current and valid, EPA requires each state to annually certify that both plans are current by submitting updated signatory pages and organizational charts as applicable. OCC's current QMP was approved on January 12, 1999 and expired January 12, 2000. OCC's current QAPP however, will expire on April 20, 2000. Therefore, a QMP update is needed as soon as possible and the QAPP should be updated before the expiration date.

FY2000 UIC Grant Allocation—Each year, limited Federal funds are distributed to authorized State UIC programs using a grant allocation formula based on the reported UIC inventory from all State and Federal programs. Because the Federal UIC grant funds are fixed, an increase or decrease in any State's UIC inventory may cause a net change in UIC funding. OCC's Federal grant allocation for Class II underground injection activities for FY2000 is \$348,400, approximately \$18,500 less than FY99. However, States are held harmless for cuts greater than 5% of the State's previous allocation.

Grant Deliverables and Due Dates for FY2000—The FY2000 workplan reflects the following due dates for these specific grant deliverables:

- ▶ Annual Inventory to be submitted as requested by Region 6.
- ▶ Final Financial Status Report to be due on or before September 30 of each year. Regarding final financial status reports, CFR 31.41 (b)(4) states: "Final reports will be due 90 days after the expiration or termination of grant support."
- ▶ Annual enforcement agreement in the annual draft workplan/application package due on or before May 1 of each year.

The Region respectfully requests the State program to submit adequate and timely deliverables. If the State program needs assistance in meeting any of its FY00 grant or program commitments, the appropriate Regional representative will provide that assistance upon request. Because of the large discrepancy between the inventory of Class II injection wells and the number of MITs performed during the last five years, the Region will again evaluate OCC's performance for this workplan target during the FY00 mid-year performance review.

FY99 PROGRAM ISSUES:

1998 Agreement Commitments—Two commitments in the 1998 Agreement between Region 6 and OCC remain unresolved in the FY99 mid-year program evaluation:

- ▶ an acceptable evaluation of the area of review/corrective action criteria used to evaluate OCC's UIC permit authorizations since 1991 (item B.4), and

- ▶ the finalization of a current UIC enforcement agreement between Region 6 and OCC (item B.5).

In an effort to satisfy item B.4 of the 1998 Agreement, on October 1, 1998, OCC staff agreed to evaluate 30 randomly selected non-commercial Class II authorizations and report to Region 6 the results and methods used to determine the area of review (AOR) and zone of endangering influence (ZEI). During the FY99 mid year evaluation, OCC staff stated that the area of review/corrective action evaluations were 90% complete, with completion contingent on the return of loaned well files being imaged for inclusion into the new data management system. On March 2, 2000, the Region received documentation from the State program intended to meet the B.4 commitment. The documents do not provide enough information to adequately evaluate OCC's UIC permit authorizations since 1991. This issue may ultimately be resolved through EPA's approval or disapproval of the State program's complete program revision submission.

The Region's Compliance Assurance and Enforcement Division has determined that a formal enforcement agreement (item B.5) is not necessary at this time.

Brine Injection and SDWA Sec. 1422 Primacy—Item C.3 of our 1998 Agreement calls for the development of a final plan to resolve existing statutory conflicts between State and Federal UIC authority related to brine injection. Both OCC and ODEQ UIC and legal staff have worked diligently with Region 6 to resolve the apparent conflicts between the State UIC jurisdictions and the applicable State UIC primacy program authorized by EPA under Section 1422 of the federal Safe Drinking Water Act (SDWA). During the 1999 Oklahoma legislative session, Senate Bill (SB) 549 effectively amended the Oklahoma Environmental Quality Act, transferring from ODEQ to OCC the appropriate state authority to regulate Class V injection wells used to remediate ground water pollution associated with aboveground and underground storage tanks. However, SB 549 did not amend the Oklahoma Brine Development Act (OBDA) which provides OCC with unrestricted authority over all “brine” injection, inclusive of all types of brine injection activities, i.e., Class I, II, III and V. In early FY00, Region 6 provided input to both OCC and ODEQ staff on anticipated draft legislation to amend OBDA. Both State agencies continue to coordinate their efforts to resolve this issue through the 2000 legislative process. The State's final action plan is detailed in OCC's letters of June 7 and December 20, 1999, with a target of July 1, 2001 for final resolution.

Class V Injection under SDWA Section 1422—Because Class V injection activities in Oklahoma are federally authorized under Section 1422 of the Safe Drinking Water Act (SDWA), a revision to the UIC primacy program is needed to rectify existing conflicts between ODEQ's and OCC's roles in implementing the State program. Both State agencies have agreed to submit a complete draft UIC program revision package no later than June 1, 2000, and a final revision package no later than July 1, 2001. The expanded final target is needed to accommodate the State's statutory and rulemaking processes as referenced in the agencies letter of December 20, 1999. Under the proposed solution, ODEQ will have undisputed authority over all Class I, III, and IV injection activities and most Class V injection, while OCC will have authority over all Class II injection activities and Class V injection associated with the injection of spent brine into

the same formation after the removal of a halogen, and aquifer remediation wells associated with clean-up of contamination caused by underground and aboveground storage tanks. The State statutes associated with these authorities are expected to be amended during the 2000 State legislative session.

SB 1010 Plugging Moratorium—In an effort to reduce the petroleum industry’s costs during times of economic hardship, SB 1010 provides a moratorium on requiring abandoned oil and gas wells to be plugged when the price of oil drops below \$15.00 per barrel [17 O.S. 1991 Section 53, amended in 1998]. In response to the Region’s request for clarification on OCC’s implementation of SB 1010 and its potential impact on the State UIC program, OCC’s Oil and Gas Conservation Division provided an administrative policy statement (letter dated November 24, 1999) that concludes the following:

- ▶ SB 1010 has no affect on the permitting process of the UIC department.
- ▶ SB 1010 has no affect on the UIC program’s enforcement of mechanical integrity testing or monitoring requirements because OCC may order a well plugged if the well poses an imminent threat to public health and safety, regardless of the status of the posted price of Oklahoma sweet crude oil.
- ▶ SB 1010 does not impact the State UIC program because wells that lose authority to inject are no longer part of the program, i.e., injection wells that are converted to oil and gas production wells. Regardless, no wells, either injection or production, are allowed to pollute the environment.
- ▶ In addition to the SB 1010 plugging moratorium on oil and gas wells, authorized “injection or disposal” wells that are in compliance with the OCC rules are exempt from plugging requirements [OAC 165:10-11-3(g)(3)].

Currently, because OCC rules do not allow a method to classify a Class II well as temporarily abandoned, the State program’s new data management system is not designed to distinguish between active and temporarily abandoned (TA) injection wells. However, OCC rules do require operators of all Class II injection wells, whether active or inactive (TA), to file annual monitoring reports and demonstrate mechanical integrity at least every five years. Based on EPA UIC Guidance #78 (Management and Monitoring Requirements for Class II Wells in Temporary Abandonment Status, June 22, 1992), Region 6 UIC program personnel believe that all injection wells should be tracked by the UIC program until the wells are adequately plugged, even following loss of authority and/or conversion to production. As part of its field inspections to validate Oklahoma’s Class II well inventory, the State UIC program previously committed to compile a list of TA injection wells and to contact the last known operator to determine the status of each inactive injection well. For wells which are either active or TA, the operator must comply with OCC regulations, i.e, 5-year MIT, annual reporting, plugging and surety. If the operator does not comply with OCC’s regulations within a specified timeframe, OCC will file contempt charges against the operator which could result in the loss of injection authority. For injection wells which appear to be permanently abandoned, OCC proposes to seek an order to

vacate injection authority. Upon losing injection authority, any injection well is required to be plugged. Once plugged, injection wells are reported as plugged on EPA Forms 7520 and in the UIC inventory reported annually to EPA. The Region's concern with this issue initially appears in the discussion of Table 3 and 4. Region 6 will monitor OCC's related enforcement actions through the required 7520 reports and quarterly SNC and UIC violation summaries required in the FY00 grant workplan.

SDWA Section 1425 Draft Program Revision—OCC submitted a draft program revision in December 1998 [item C.1, 1998 Agreement] to revise its UIC primacy program previously approved under Section 1425 of the Safe Drinking Water Act (SDWA). Several major program issues in the draft program revision will require a detailed analysis:

- ▶ Review of OCC's rules of practice (OAC 165:5) related to public participation and the UIC permitting process
- ▶ A reduction in the area of review/corrective action methods [OAC 165:5-7-27, and as described in the draft program revision].
- ▶ All OCC rulemakings adopted after December 31, 1991, that amend OAC 165:10 and any other State regulations or statutes that may affect Oklahoma's Class II UIC program.

In addition to these items, the plugging exemption for "injection or disposal" wells at OAC 165:10-11-3(g)(3) and any program policy or rules developed under the authority of SB 1010 should be included in OCC's program revision if the potential exists to impact the State UIC program.

During 2000, the Region expects to conclude its review of OCC's draft program revision. Subsequently, the Region may request a final program revision that may require formal public participation and approval by EPA headquarters for all program revisions deemed substantial (major).

Permitting/Area of Review/Corrective Action—Congress authorized the Federal UIC program as part of the Safe Drinking Water Act (SDWA) to protect underground sources of drinking water (USDWs) from contamination by underground injection activities. By statute, the UIC program is protective in nature. To that end, every State UIC Primacy program approved by EPA under SDWA authority must initially demonstrate and maintain an effective program that provides that statutory protection. A major part of any State UIC program is the adequate review of an operator's application for injection that prevents any permitted injection activity that may contaminate any USDW.

OCC currently requires the operator to submit information on all wells that penetrate the injection zone within one-quarter mile of a proposed Class II injection well. According to the original 1981 Primacy program description, OCC would require the operator to submit information on all wells penetrating the injection zone within a one-half mile radius and also require the operator to perform corrective action for any well within the pressure influence prior

to approving UIC authorization. Even though the permit application form provides space for geologic information necessary to calculate the pressure influence of the injection activity (ZEI), OCC typically does not require the operator to submit the information prior to receiving a pollution docket number (PD#). Once a PD# is assigned, the operator can then public notice its Class II well application. If no comments are received by OCC within 15 days of the public notice, the application can be approved administratively without a public hearing. This procedure allows the public comment period to lapse without public access to information necessary to determine the impact of the proposed underground injection activity.

OCC staff typically determine the ZEI of a proposed injection well only if any wells within the fixed quarter mile radius around the proposed injection well are recognized as needing corrective action. However, OCC generally requires corrective action within the ZEI only when the ZEI is less than or equal to the quarter-mile fixed radius. If the pressure influence of the well goes beyond the fixed radius, OCC limits any required corrective action to the fixed radius. Thus, any artificial penetrations influenced by authorized injection beyond the fixed radius receive no preventative attention. As part of the State's draft program revision submission, Regional UIC oversight staff have initially identified this application/permitting process as a major revision to OCC's Primacy program.

The following case studies illustrate the impact of OCC's permitting and surveillance procedures for Class II injection activities on Indian Lands in Oklahoma:

W.M. Park–Jacob Street #19 (J.S.19), Bird Creek Field, near Skiatook, Tulsa

County: OCC authorized the J.S.19 administratively (order no. 332194) on November 8, 1988, as a non-commercial saltwater disposal well. The permit was transferred from the original operator, Albert Fadem, in 1995, and again to the current operator in 1996. The order authorizes injection into the Bartlesville Formation between the depths of 1,192.5 and 1,218.5 feet below the surface. The Bartlesville also produces oil in the Bird Creek Field. The order further limits injection to no more than 200 barrels per day (b/d) at an injection pressure no greater than 150 pounds per square inch (psi). The 1988 order also identifies the “base of the deepest known fresh water zone within a one-half mile radius” at 60 feet below surface [base of underground source of drinking water (USDW), 10,000 ppm total dissolved solids]. According to OCC records, the J.S.19 was drilled in 1977 and completed into a Mississippian lime with 32 feet of surface casing and 1,495 feet of production casing, being later plugged back to 1,300 feet.

In February 1998, Region 6 NPDES/UIC Enforcement field staff investigated a “huge kill area” around the J.S.19, with the “pit being emptied over the berm onto the ground” [taken from field notes]. An apparent unplugged well was also discovered “bubbling” fluids at the surface approximately 100 feet south of the J.S.19. The observed “bubbling” consisted of a brine and gas mixture with minimal surface flow from the unplugged well. Other unplugged wells were also observed in the general area within the Bird Creek Field. During a follow-up visit on May 12, 1998, EPA staff observed the J.S.19 injecting near 300 psi surface pressure (double the authorized operating pressure). In an effort to determine the source of the surface pollution, water samples were collected from the

“bubbling” unplugged well, several producing wells, and a nearby adjacent ditch and slough. These samples contained total dissolved solids (TDS) concentrations near 10,000 ppm, less than one-tenth the concentration of produced brine from the Bartlesville (132,000 ppm). However, the resulting cation/anion ratio analyses matched the saltwater produced from the Bartlesville, indicating a possible connection with Bartlesville formation waters. This fact and the much lower TDS in the bubbling well suggest mixing of Bartlesville brine and shallow groundwater within the unplugged borehole. The operator also reported to EPA field staff that both the Bureau of Land Management (BLM), who manages the production leases on Indian Lands, and OCC’s district field inspectors were aware of the unplugged well and others in the immediate area.

In December 1998, Region 6 UIC oversight and enforcement personnel and Oil Spill Prevention and Response staff (Oil Pollution Act) joined OCC field inspectors and representatives from BLM and the Cherokee Nation in a joint investigation of the unplugged well near J.S.19. OCC has UIC Primacy over Class II injection for the Five Civilized Tribes in Oklahoma while EPA implements the UIC program on other Indian Lands in the State. The location of the unplugged well was determined using a Global Position System device and verified as being on lands of the Cherokee Nation, one of the Five Civilized Tribes in Oklahoma. However, one of the OCC inspectors stated that OCC did not have the authority to “require an operator to plug a well on lands of the Five Civilized Tribes.” Subsequently, both EPA and OCC staff determined that the unplugged and nearby injection well clearly fall under OCC jurisdiction. EPA staff also measured the fluid level in the J.S.19 at 27.5 feet below surface, 32.5 feet above the 60 foot depth for base of USDW identified in the 1988 J.S.19 order. At that fluid level, brine from the Bartlesville Fm. could flow upward into the USDW through improperly plugged well bores.

In an effort to identify the “bubbling” unplugged well, EPA staff reviewed OCC well records in the vicinity of J.S.19. That file review identified several inactive Bartlesville oil wells within one-quarter mile of the J.S.19 that were either never plugged or plugged only with drilling mud. One of those wells, the Fadem–Jacob Street #10 (J.S.10) was authorized by OCC in 1959 (order no. 39733) to dispose of saltwater into the Bartlesville (1,070-1,100') in the same vicinity as the J.S.19. No completion or plugging reports were found in OCC’s well records for the J.S.10, and the J.S.10 did not appear in OCC’s electronic database even though Albert Fadem operated both injection wells. The order indicates a total depth of “approximately 1200 feet”, with 31 feet of 10" casing, 493 feet of 8" casing, 1,070 feet of 6¼" casing, and “that none of this casing showed any cement.” Because the J.S.10 injection was to occur with no surface pressure, i.e., gravity feed, the order limits injection to 20 b/d under gravity feed.

In a February 1, 1999, memo, the State UIC program agreed that the unplugged well needed to be plugged and indicated that OCC would take action to cause the well to be plugged. OCC allowed the J.S.19 to continue to operate as permitted without requiring the operator to take any corrective action or conduct any conclusive investigation of the “bubbling” unplugged well. That decision was based on short-term

visual observations which showed no change in fluid level in the of the unplugged well during and after injection into the J.S.19. OCC did not evaluate factual subsurface information such as current bottom-hole pressure in the injection zone, the effects of long term injection, and any potential impacts from other formations such as production zones, USDWs, etc. The fingerprint of formation water from the unplugged well, the shallow fluid level in both the unplugged well (J.S.10) and the injection well (J.S.19), and the proximity of the unplugged well to the injector were also apparently not considered in OCC's conclusions.

The "bubbling" well was plugged by BLM on September 15, 1999, to prevent further pollution of surface and ground waters. Using available well records, BLM identified the unplugged well as the J.S.10, and the amount of un-cemented surface casing observed during the plugging operation supports that determination (32 feet of 7" casing, no other casing in hole). No existing plug mud was found below 100 feet to a total depth of 1,005 feet. EPA and OCC staff agree with BLM's determination that the plugged well is the same as the abandoned J.S.10 disposal well previously permitted by OCC in 1959. BLM apparently plugged the J.S.10 without informing OCC or receiving appropriate authorization from the State. OCC rules [OAC 165:10, subchapter 11] place specific plugging requirements on owners and operators, including notification, adequate plugging procedures, and filing plugging record.

The Region is concerned that in the 1988 permitting process for the J.S.19 the J.S.10 injection well was not identified for corrective action. OCC's 1988 records for the J.S.19 indicate a calculated zone of endangering influence (ZEI) of 15 feet (L. Fiddler, personal communication, 12/17/99). Based on pressure influence calculations in OCC's permitting records, the State program generally assumes an initial formation pressure of zero in calculating the zone of endangering influence (ZEI). By using zero, the calculated radius of endangering influence is less than a radius determined by using the measured original bottom hole pressure of a targeted injection zone. Assuming a bottom hole pressure of zero to calculate a zone of endangering influence does not result in a valid area of review assessment, and therefore, does not adequately protect USDWs from authorized underground injection.

Since BLM discovered no effective surface casing (only 32 feet), no cement, and no plug mud below 100 feet in plugging the J.S.10, the USDW was most likely exposed to any fluids that may have migrated into and up the open wellbore, including brine from the Bartlesville and fluids from shallower formations. In addition, any fluids entering the wellbore could exit into exposed formations exhibiting less hydrostatic pressure.

Based upon the water analyses, the existing pressure in the Bartlesville Formation in the area of the J.S. 19, and the presence of unplugged and mud-plugged wells in this area, the USDW has likely been contaminated. Continued injection into the J.S. 19 without appropriate corrective action could allow further contamination of the USDW. Therefore, a formal re-evaluation of the pressure influence from injection into the J.S.19 and other injection wells in the area should be performed as soon as possible. That re-

evaluation should consider an appropriate zone of endangering influence calculation using real formation factors and permit parameters existing today, including current bottom hole pressures. If necessary to protect USDWs from possible contamination, OCC should also require the operator(s) to discontinue using the J.S.19 until adequate corrective action is performed to prevent further contamination that may result from injection or from leaks through other abandoned or active production or injection wells within the well's pressure influence.

During discussions on this matter, OCC's UIC manager stated that OCC does not have the staff to periodically re-evaluate the pressure influence of disposal wells and would only do so if an environmental impact required a review of a particular injection activity. Generally, a re-calculation of the pressure influence (ZEI) would only be done following a complaint and verification of ground water contamination or surface broach of injection fluid.

Although the J.S.19 has a permitted injection pressure limit of 150 psi, OCC's UIC manager stated (February 1, 1999, memo) that the well "is disposing fluid on gravity feed, without any positive pump pressure being utilized." Alternatively, as previously mentioned, EPA field staff observed the J.S.19 injecting at near 300 psi in May 1998. Based upon the following observations:

- ▶ apparent ineffective enforcement surveillance and related corrective actions,
- ▶ inadequate recordkeeping and collection/evaluation operator's annual monitoring reports,
- ▶ inappropriate use of the ZEI formula in permitting injection activities (using zero as initial injection formation pressure) and insufficient review of wells with the associated area of review,

the State's Class II UIC program has apparently permitted injection activities that endanger underground drinking water resources and has not responded appropriately with effective surveillance and enforcement action. Both are clear violations of the Safe Drinking Water Act (SDWA). The ability of a State UIC program to detect and eliminate injection practices which allow any migration that endangers drinking water sources is of major importance in determining the effectiveness of a State's Class II UIC program [46 FR 27333, 27338, May 19, 1981].

Since preventing fluid movement into USDWs is the protection standard for any UIC program, a determination of contamination or establishing a direct connection to surface flow is not a pre-requisite for requiring any corrective action under the Safe Drinking Water Act. Therefore, in this case, the "bubbling" of fluids from the unplugged well is not the UIC issue; the issue is the possible upward migration of injected brine into the USDW, a direct violation of SDWA protection standards.

Southwestern Energy–Tennessee Alexander #4, Comanche Field, near Comanche, Stephens County–In mid-September 1999, the operator published public notice in the Daily Oklahoman and the Duncan Banner of its application for OCC to administratively approve conversion of the Tennessee Alexander #4 (SE NE NE NE Section 20, T2S, R7W, Stephens Co., OK) to a disposal well. The notices identifying the application's pollution docket number (PD 990000270), the injection zone (Cisco Fm. between 1616 to 1790 feet) and an injection rate and pressure of 3,500 bpd at 695 psi, also requested any objections to be filed with OCC's Pollution Abatement Department within fifteen (15) days after publication. No objections were apparently filed and OCC issued Order No. 436107 on October 20, 1999, after the UIC Department concluded that disposal operations would not allow fluids to migrate into USDWs. The order permitted the operator to dispose of produced saltwater into the Cisco Fm. between 1480 and 1790 feet below surface at a maximum rate of 3500 bpd and pressure of 695 psi. Although not required, the public notice did not identify the location of the well as being on Lands of the Chickasaw Tribe.

The Bureau of Land Management staff, who manage production of oil and gas on most Indian Lands in Oklahoma, brought the Tennessee Alexander #4 (T.A.4) authorization to the attention of Region 6 UIC oversight personnel because BLM discovered an inadequately plugged well (T.A.2) within the area of review (AOR) of the proposed non-commercial disposal well. BLM typically reviews all wells within a ½-mile radius for plugging adequacy before approving conversion from production to disposal. BLM's authority is independent of OCC's UIC primacy program authority over permitting Class II injection on the lands of the Five Civilized Tribes in Oklahoma, including lands of the Chickasaw Tribe. On November 15, 1999, BLM rejected Southwestern Energy's application to convert the T.A.4 well from production to disposal because the closest offsetting production well, the T.A.2, was plugged with only heavy mud and capped with only four sacks of cement after settling for about three weeks. The reviewed records indicate that the T.A.2 was drilled through the Cisco Fm. to a total depth of 1882 feet and mud-plugged in 1944.

BLM's referral of the T.A.4 injection well included copies of an AOR map, an amended OCC form 1015 (Application for Administrative Approval) dated October 18, 1999, a 1984 OCC form 1002A (Completion Report), water analyses dated October 5 and 11, 1999, the previously mentioned public notices and OCC's order permitting non-commercial underground injection. The amended application and water analyses were submitted by the operator almost a month after the 15-day public review/comment period and only days before OCC issued its order granting injection authorization. The injection zone was expanded and the base of the USDW was raised in the amended application. Therefore, a complete amended application was not available for public review prior to permit issuance.

Another issue identified in EPA's 1997 comprehensive review includes OCC's issuance of a Pollution Docket number (PD#) prior to the operator's submission of a complete application. The operator's amended form 1015 dated 10/18/99 listed an

average porosity of 27% for the Cisco Fm., but did not list an average permeability or static fluid pressure of the injection formation. All three formation parameters are needed to calculate the pressure influence of any proposed injection activity. A major geophysical survey company provided the Region with much different parameters for the Cisco Formation: an average porosity of 12.5-15% and an average permeability between 30-40 millidarcys. BLM provided an initial reservoir pressure of 100 psi. Based on those parameters, the Region calculated a zone of endangering influence for the proposed T.A.4 disposal well with a radius ranging between 3,700 feet and 6,200 feet, much more than the standard quarter-mile (1,320 feet) reviewed during OCC's standard permitting process. This again raises concern with the State program's AOR/permitting process currently under evaluation by the Region as part of OCC's draft program revision.

As important is the public's opportunity to review the "correct" parameters necessary to evaluate the protectiveness of an operator's UIC application. Based on discussions between the Region's UIC oversight staff and OCC's UIC program director, OCC staff intend to request the operator to request an amendment to order 436107 to assure that the order and public notice parameters match. Using OCC form 1015A, the operator may submit and public notice an application to amend an existing order, thus assuring that the injection activity approved by OCC on October 20, 1999, follows regulatory procedures appropriately. The State UIC program intends to also require the operator to properly plug the T.A.2 well prior to authorizing injection into the T.A.4 disposal well.

The Region also has concerns with the language of the order itself. In reviewing Order 436107, the "termination" language described in findings number 10 states:

Authority to dispose shall terminate if:

- a. The well is used for commercial disposal; or*
- b. Operation of the well for disposal pollutes or endangers subsurface treatable water; or*
- c. The well is operated at unauthorized rates or pressures; or*
- d. The operator does not comply with the provisions of this order or the Rules of the Commission governing operation of the well as a disposal well; or*
- e. The operator does not maintain with the Commission an agreement to plug abandoned wells accompanied by security. [Emphasis added.]*

This "termination" language was identified as an issue in the 1997 program review (Table 1, page 2) and subsequent discussions with OCC UIC and legal staff left Region 6 UIC oversight personnel with the understanding that the "termination" language would be modified in future injection authorizations. The Region has received no evidence of any UIC orders being terminated for non-compliance with OCC orders or regulations. In order to adequately address this issue, OCC should either modify the current language of its orders or effectively enforce the "termination" language as written. Please provide

EPA with information which verifies that OCC enforces the written “termination” language of its orders.

Alleged Contamination of USDWs—In March 1999, the Region received a ground water contamination complaint from Dr. Gale Kimball and Ms. Carla Hilbert of Ripley in Payne County. Both complainants experienced new artesian flow in their water wells that decreased and ceased when a nearby Class II injection well was shut down for mechanical integrity repairs. In an April 26, 1999, letter, the Region’s Water Enforcement Branch requested specific data from OCC’s Pollution Abatement Manager concerning OCC’s investigation of this citizen complaint and specific information on oil and gas activities in the area. To date, OCC staff have not responded to the Region’s request for information. The Water Enforcement Branch reviewed OCC District Office files to obtain enough information needed to complete the investigation. State UIC programs are obligated to make available to EPA any information obtained or used in the administration of the program upon request by EPA, without restriction [40 C.F.R. §145.14, and MOA between Oklahoma and EPA, Region 6, April 13, 1981].

Operator Compliance with Reporting Requirements—A major program deficiency identified in the Region’s 1997 primacy program review of OCC’s UIC program is operator compliance with submitting annual reports of their injection activities as required at OAC 165:10-5-7. In 1996, operators submitted only 65% of the required annual monitoring reports (OCC form 1012) with OCC providing little to no historical enforcement action to achieve compliance, while other states in Region 6 exhibit a compliance rate greater than 90% each year. State UIC programs are expected to achieve 100% compliance through effective surveillance and enforcement actions. Effective State programs should also review the annual monitoring reports for compliance with permitted parameters and State UIC regulations and address any non-compliance through appropriate enforcement actions.

In August 1999, the State UIC program requested all non-compliant operators to submit delinquent annual reports (1012s) within 30 days. Over 500 warning letters (representing over 5,000 injection wells) were mailed during Summer of 1999. In September 1999, non-compliant operators were mailed more threatening notices requesting compliance within 15 days and that continued non-compliance “can result in fines or termination of the injection order.” To date, no fines or penalties have been imposed in OCC’s efforts to collect delinquent 1012s.

Because of problems with verifying an accurate well inventory and in collecting delinquent monitoring reports, OCC staff have not provided Region 6 with reliable operator compliance values for 1997 and 1998. OCC has been unable to provide accurate values of the number of wells represented in annual reports received for 1997 and 1998 because of conversion problems with its data management system. During the EOY evaluation visit, OCC staff reported collecting between 10,000 and 11,000 annual operator monitoring reports prior to September 1999. However, in January 2000, OCC’s computer based tracking system reported 8,334 and 8,093 wells represented by submitted annual monitoring reports for 1997 and 1998, respectively (L. Fiddler, personal communication). Assuming that the reported inventory for 1999 is accurate (15,610 Class II injection wells), the OCC form 1012 (annual monitoring reports) values represent only 53% and 52% operator compliance, and approximately 7,500 non-

compliant Class II wells for both years. The Region will continue to monitor the effectiveness of OCC's enforcement of OAC 165:10-5-7 during FY00.

Table 5. A comparison of OCC's UIC well inventory with operator compliance in submission of annual monitoring reports [OAC 165:10-5-7], between 1992-1998.

YEAR	REPORTED UIC WELL INVENTORY	ACTUAL WELLS IN INVENTORY	ANNUAL REPORTS RECEIVED	UIC WELLS REPRESENTED IN REPORTS	PERCENT COMPLIANCE ‡
1999	15,610	15,610	due 4/2000	--	--
1998	15,995	15,995	not available	8,093	51%
1997	17,351	17,351	not available	8,334	48%
1996	22,253	15,915 ♦	7,009	10,399	65%
1995	21,596	16,079 +	8,101	12,812	79%
1994	21,545	16,028 +	3,650	8,050	50%
1993	21,350	15,833 +	3,747	8,961	57%
1992	21,658	16,141 +	4,207	9,923	62%

Shaded values taken from 1997 informal program review (FY97 EOY evaluation).

♦ In 1996 the OCC began an effort to eliminate plugged and abandoned and terminated wells from the inventory and assign individual API numbers.

+ Estimated values - The actual inventory for these years is unavailable and therefore extrapolated using the 1996 discrepancy between reported and actual inventory. The percentage of reports received is then calculated using the estimated actual inventory and the number of wells represented by the reports received. These numbers were reviewed and agreed upon by the OCC staff.

‡ Percent of actual or estimated UIC well inventory compliant with OAC 165:10-5-7.

Conclusions—In the 1980 Safe Drinking Water Act (SDWA) Section 1425 amendments, Congress allowed States to achieve UIC primacy for injection activities associated with oil and gas recovery and production through an alternative demonstration that “meets the requirements of subparagraphs (A) through (D) of Section 1421(b)(1) and represents an *effective* program to prevent underground injection which endangers drinking water resources.” [Emphasis added.] On page 5 of the accompanying September 19, 1980, House Report No. 96-1348, the intent of Congress is further clarified:

“These requirements are the *same* as must be met by the Administrator in establishing his regulations, thus *ensuring* that a State program pursuant to an alternative demonstration results in an *equivalent degree of protection* for drinking water resources.” [Emphasis added.]

If EPA formally finds any State UIC program ineffective in protecting underground drinking water resources, SDWA Section 1422(c) requires the EPA Administrator to initiate proceedings to withdraw State UIC primacy. Although undesirable, a formal “effectiveness”

determination may be necessary to ensure that Oklahoma's UIC primacy program maintains an "equivalent degree of protection for drinking water resources" as provided by the Federal UIC Regulations.

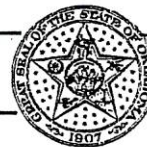
As an alternative to a formal initiative to determine the "effectiveness" of any State UIC primacy program previously approved under SDWA Section 1425, a State may submit a program revision pursuant to 40 C.F.R. §145.32. If a State's complete submission is disapproved and the State subsequently fails to submit an acceptable program revision, Section 1422(c) mandates the Administrator, through rulemaking, to prescribe a State UIC program that meets the requirements of Section 1421(b). The corresponding Federal Regulations at §145.32 also allow the Administrator, under certain circumstances, to withdraw program approval when a State UIC program no longer complies with the requirements of 40 C.F.R. Part 145, and the State fails to take appropriate corrective action.

The Region continues to be concerned with the effectiveness of Oklahoma's Class II UIC program. Many of the issues previously raised in the 1997 primacy program review remain unresolved. The Region anticipates resolving most program implementation issues through EPA's approval or disapproval of the State's complete Class II program revision (SDWA Section 1425). UIC issues not resolved through the program revision process must be resolved through cooperation between OCC and the Region. If resolution is not apparent, a formal review to determine the effectiveness of Oklahoma's UIC program appears warranted.

OKLAHOMA
CORPORATION COMMISSION
P.O. BOX 52000-2000
OKLAHOMA CITY, OKLAHOMA 73152-2000

255 Jim Thorpe Building
Telephone: (405) 521-2301
FAX: (405) 521-3099

OIL & GAS CONSERVATION DIVISION



Mike Battles, Director

May 9, 2001

Sam Becker, Acting Director
Water Quality Protection Division
EPA Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 72142-2000

Re: UIC State Primacy Program, End-Of-Year Evaluation, SFY 2000

Dear Mr. Becker:

Enclosed is the OCC's response to the EPA's March 28, 2001, End-Of-year Evaluation of its UIC program for the SFY 2000. The response is in the same structure as the report for ease of reference.

The OCC's response disputes many of the concerns raised in the EOY Evaluation, particularly the statistical analysis related to Mechanical Integrity Tests. The OCC strongly believes that the issues disputed are rooted in the accuracy of its database. The conclusions do not adequately account for this factor and are detrimental to the evaluation process and our partnership. The OCC has made great strides in improving the accuracy of its data and is continuing to do so. However, this is a "moving target" due to our forced reliance on the operators of Class II UIC facilities to provide us with accurate information. The cure rests with improved enforcement and surveillance, both of which are addressed in the evaluation and our response. These measures however, are relative and not absolute; they are goals. In reality, the OCC must consider the circumstances with which it is surrounded, the facts with which it faces as a regulatory body. We choose not to operate in a vacuum of statistics without wisdom and sound judgment. The Evaluation, in our opinion, lacks such wisdom and judgment. It disregards the progress we have made. It does acknowledge that accurate data plays a role in the analysis, yet it does not attribute proper value to it nor does it provide proper credit for the OCC's improvements regarding such.

The OCC acknowledges that there are some deficiencies in the Program and is striving to correct them all. The OCC strongly disagrees with the conclusions of the Evaluation. We look forward to discussing these and other issues with you.

Sincerely,

Michael W. Schmidt
Deputy Director,
Oil and Gas Conservation Division

cc: Mike Battles, Director
Tim Baker, Manager of Pollution Abatement
Rod Davari, Manager of Underground Injection Control

**Oklahoma Corporation Commission's Response
To
EPA Region VI
End-Of-Year Evaluation Of UIC Program
State Fiscal Year 2000**

2001

This document is written in response to EPA's End-Of-Year Evaluation transmitted to OCC via e-mail on March 28, 2000; following the meeting of September 20, 2000. The intent is to clear ambiguities of the report, accept liabilities where they are warranted, and be enlightening as to the roots of the problems, reaching beyond statistical analysis in evaluating the program; as it is the intent and spirit of the Primacy Program.

Grant Workplan

Grant Award: The Federal grant for \$348,800 for SFY 2000 was received in late April of 2000. The funding was approximately 30% of the total required budget for program's implementation.

Quality Assurance Annual Updates: This is a misleading statement. The correspondence of July 11, 2000, received from Region VI via e-mail regarding this matter stated that "...if there are no changes from last year's QAPP and QMP, then all that you need to do is send me updated signatory pages and organizational charts (as applicable)." The requested documents were submitted on July 12, 2000. EPA's subsequent review required additional revisions, which resulted in complete revamping of the QAPP. The revised QAPP was submitted on January 16, 2001. The document went through further review by Region VI and returned to OCC for clarifications on February 15, 2001. The document is currently being revised for yet another submittal. The submittal date of January 2001 was inferred by OCC as reaching a consensus, not becoming delinquent!

Grant Accomplishments and Deliverables: It has been explained to EPA repeatedly that as the UIC database is "cleaned up", the active well count will change. The number of "active" Class II injection wells in the database at the end of SFY 2000 appeared to be 15,610. In reality however, a great number of these wells had been "temporary abandoned" as a result of depressing economic climate in the oil industry in the late 90's causing a high degree of variance from the targeted compliance rates in mechanical integrity testing and reporting requirements. It was not until the clarification of the status of these wells in UIC's database that a realistic picture emerged. It is only in this context that the target values and actual values as displayed in Table 2 can be properly evaluated. Otherwise statistical analysis of these values leads to nothing but meaningless, rigid minded, unrealistic, and flawed conclusions.

FY01 UIC Grant Allocation: Discussions regarding the Class II "inventory" numbers and their effect on the Grant Allocation with Region VI was to have taken place in September 2000. The OCC was also to be party in a national discussion regarding Class II "orphan" wells. The issue of Class II "orphan" wells needs to be addressed in a broader view than a mere variable in the Grant Allocation formula. The overhead associated with the implementation of the Program will remain the same if not higher. In fact, addressing this issue has already become much more demanding

on OCC's resources and this is only the defining phase of the process. Once this process is completed and the implementation of the program is initiated, the plan will be very demanding and capital intensive. Current allocations only provide for 30% of the budget of the Program. The reduction in number of "active Class II" wells, as the defining factor in Grant Allocation process, coupled with high maintenance or plugging and abandonment cost will reduce this percentage even further.

Program Issues

Annual UIC Inventory Accuracy: The issue of the accuracy of the UIC's database has already been addressed. It is conceivable that 2,000 UIC Class II wells were not tested. It is imperative that meaning of "active" be defined since the OCC's Rules do not recognize a Temporary Abandon category. "Active" in this scenario only refers to the status of the well as it relates to the status of a data point in UIC's database. The mathematical analysis of Table 3 however, is contradictory to the facts or ambiguous at best. The analysis creates an impression indicating "...a strong probability that approximately 2,000 active Class II wells were not tested pursuant to the MIT frequency requirements of OAC 165:10-5-6." The governing factor in creating such a high degree of variance is the low degree of accuracy of the data. That is what needs to be addressed and is being addressed.

Annual Reporting By Well Operators: The compliance rating related to this requirement has improved and will continue to improve. The report erroneously states that "An OCC compliance report dated, showed a reduction of non-compliant operators from 50% as of July 18, 2000, to 8.6% on September 22, 2000." The percentile reduction cited in the October report is referring to the number of wells, which are by far more meaningful criteria than the number of operators. Percentile rating of wells, wheather in terms of compliance or noncompliance, is superior to the number of operators as an indicator, since it is a direct statistical evaluator. This rating as reported on December 22, 2000, for wells in compliance is 94.7%. OCC finds this rating comfortable, but not acceptable. Region VI finds the same set of data, presented in a different manner," troubling".

Revocation Of Injection Orders and AOR Concerns: The process of Vacating Injection Orders has started recently and the first Public Hearing was held April 24, 2000, with regards to cases in OCC's District I. The report of Region VI states that "no apparent technical evaluation (compliance review) was performed to determine if any abandoned injection well falls within the pressure influence of another permitted injection facility." The issue of "pressure influence" is addressed in the AOR process where Corrective Actions are addressed. Repeating this process would be redundant. It is plausible that the "terminated" well may become a "problem" well with time as a result of deterioration of mechanical integrity of the well. The possibility of requiring an offsetting operator to carry the burden of expenses associated with the plugging and abandonment of these terminated wells is not only remote due to lack of OCC Rules, it would certainly raise the issue of Correlative Rights. In conclusion, these are far reaching assumptions by EPA with no evidence that such practices actually took place.

Quarterly Reports, SNC, and Exceptions (Forms 7520): Unless there is a difference of opinion with regards to the definition of the violations stated in the report, the discrepancies should be factual and open to revision. The compliance surveillance is performed at least twice per year on

Commercial Disposal wells. The noncommercial Class II wells are reviewed for compliance by two means. Approximately 20% of the inventory are reviewed in detail annually, during their Mechanical Integrity Testing. With a high degree of probability, between 15% to 20% are also surveyed annually due to delinquencies associated with annual reporting requirements. Effective enforcement actions of last year produced compliance ratings of greater than 90%, as discussed previously. Expanding the deficiencies of the Program in reporting and concluding that "The inconsistency in OCC's compliance reporting to EPA indicates inadequate compliance surveillance, ineffective enforcement, and inaccurate reporting of noncompliance, SNC, and Exceptions." is a grossly unfair assessment of the Program and lacks the spirit of partnership on behalf of Region VI.

Operator Financial Assurance: The Financial Assurance has improved during the past 20 years. However, it is the same Financial Assurance that Oklahoma UIC program had in place when authorization was received from EPA in 1981. This statement is beyond the scope of the Annual Review.

New SB 1048 Well Plugging Statutory Amendment: Region VI questions as to "Exactly how this statutory revision and associated Rules impact Class II injection wells..." have been repeatedly addressed. The statute addresses the issues relevant to protecting the environment in that it allows the Commission to order a well to be plugged after conducting a public hearing. The responsibilities of the oversight to plug abandoned wells always remain with the Commission, although the means by which the goal is to be achieved have altered. In fact, there have been numerous Class II wells on producing leases plugged recently. Actually, most of the Class II 2R wells meet this criterion. If the operator on a voluntary basis does not plug the wells, the issue could be pursued and brought to closure through the hearing process. This section should to be addressed in the "Draft Program Revision" and not in the EOY Evaluation.

Oversight File Reviews: There are two cases in this section that are being questioned by Region VI: State School Land # 2, and M. Johnson # 1.

W.B. Hoppes Oil Company, State School Land #2

This case has been under review by Region VI since April of 1992. The application was processed and an Order was issued creating a Class II injection well. The review process was performed according to OCC's Rules. Accordingly, the study of the Area of Review was conducted using a quarter of a mile radius and no problem wells were found. Region VI insist that there were six problem wells within ½ mile radius of the well and that corrective action should have been taken with regard to these wells. The OCC maintains that Technical Requirements (40 CFR 146) of the Safe Drinking Water Act provides Provision for an Area Of Review with a "Fixed Radius" when calculating the Zone Of Endangering Influence. It states that "In the case of application(s) for well permit(s) under 122.38 a fixed radius around the well of not less than one – fourth (1/4) mile may be used."

Region VI concludes that "The State program's ZEI calculation is fundamentally flawed because the bottom hole pressure of the injection zone is not considered." (Emphasis is UIC's). It is ambiguous whether the statement is addressing this particular case under discussion or it is directed at the Oklahoma Primacy Program's ZEI calculations as a whole. Comments throughout the report lead the reader to think that the latter is the intent. The bottom hole pressure is considered in the ZEI calculations. In this instance it was considered to be zero, but it was considered. There is a difference. The report states that "The practice of using a zero initial formation pressure is inherently wrong and contradicts the ZEI calculation parameters at 40 CFR 146.6." The report does not elaborate on its conclusions. If by "initial formation pressure" the

report is referring to a theoretical virgin formation pressure, the claim that “ the practice ... is inherently wrong “ is comprehensible. The bottom hole pressure in this case however, and most others for that matter, are empirical values determined through measurement or as a matter of engineering judgements. These judgements are based on the practices in an area and a particular formation in that geographic location. If Region VI is referring to the assumption upon which the modified Theis equation is based, which states that “ The emplacement of fluid into injection zone creates instantaneous increase in pressure?” Then the question would be what instance in the life of the reservoir is being considered. The reservoir’s behavior as a dynamic system is being monitored throughout its life by means of observing the surface pressure, which is the reflection of the bottom hole pressure. From a regulatory point of view, this change of condition is addressed through amended application. Further discussion regarding this matter would be productive during EOY Evaluation if it brings a conclusion. The argument is speculation on EPA’s part and should not be a part of the EOY Evaluation.

E.L. Thomas, M. Johnson #1

The issues related to Public Notice would be best served if they were the subjects of a conclusive discussion during EOY Evaluation. It has been such a redundant issue with Region VI. The initial public notice as mentioned by the report was “ flawed” in that it did not include the name of the owner / operator. The operator was notified and required to republish the notice. Errors in publications do happen and are addressed accordingly. How is this related to the subject at hand? Is Region VI planning to address misprints in its annual reviews? This response is not going to devote any more time to this subject.

The language in the Emergency Order however, deserves comment. In addressing the issue of problem wells, the Order lacks clarity. As one of the condition of the Order, the Order states that “ After the sixty (60) day period if there are any problem wells that are encountered as a result of the use of the M. Johnson #1 disposal well, that all problem wells will be plugged...” The statement implies that a problem well could be created as a result of the injection activity to be permitted, not that problem wells existed within the ¼ mile review at the time of review. Region VI however, infers that “...the language in the emergency permit allowed the operator to continue injection unless the authorized increased pressure caused a flow to surface.” This is a ridiculous argument and should be removed from the EOY Evaluation. Region VI has requested that “OCC...submit copies of the complete technical and administrative records on this injection well, past and present.” The records of the OCC are open to public.

Mechanical Integrity Surveillance: The report discusses the discoveries made by Region VI during the EOY Evaluation of September 2000 in which several failed wells had not been re-tested. OCC Rules specifically state that the UIC wells, which fail the Mechanical Integrity, should remain shut- in until the well is repaired and re-tested. The Annual Reporting requirement is used for surveying the compliance with the Mechanical Integrity Testing, in addition to random inspection by Field Inspectors. The issues related to Annual Reporting requirements have been addressed. Region VI states that “ A review of OCC’s database also revealed non-compliance with annual monitoring reports (OAC 165:20-5-7) for the Tag-Herman Frank #1 for 1998... Based only on this file review, EPA questions the effectiveness of OCC’s surveillance and compliance tracking of MITs.” The surveillance of Commercial Disposal wells has been increased to once every three months since the beginning of the current calendar year. Once the UIC database is cleaned of erroneous data, surveillance of non-commercial facilities will increase to semi-annually in the first phase and then quarterly. Conclusions concerning MIT surveillance are pure speculation on the part of Region VI and should be removed from the EOY Evaluation.

Update of Draft Section 1425 Program Revision: No comment is provided by OCC.

Update of Draft Section 1422 Program Revision: No comment is provided by OCC.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JUL 05 2001

M. Vaughn

Scanned

FY2000

Mr. Larry Fiddler, Acting Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Fiddler:

The enclosed report summarizes EPA's evaluation of the performance of Oklahoma's Class II Underground Injection Control (UIC) program during Fiscal Year 2000 (FY00). On September 20, 2000, Mr. Larry Wright, Chief, Source Water Protection Branch, Mr. Philip Dellinger, Chief, Ground Water/UIC Section, Mr. Mike Frazier, UIC program oversight manager, and Mr. Mike Vaughan, UIC grant manager, visited OCC's offices and participated in discussions with Mr. Larry Shaver, Mr. Mike Battles, Mr. Mike Schmidt, Mr. Mike Decker, Mr. Tim Baker, and Mr. Rod Davari, concerning current UIC program implementation issues. In a letter dated May 9, 2001, Mr. Schmidt, Deputy Director of OCC's Oil and Gas Division, submitted comments on a draft end-of-year (EOY) evaluation. So that OCC's perspectives are adequately represented, Mr. Schmidt's letter and OCC's response comments are included as part of this evaluation. The FY00 evaluation consists of three parts:

- FY00 UIC grant workplan commitments and accomplishments
- UIC program oversight issues
- OCC's response comments to EPA's draft FY00 UIC EOY

Oklahoma Corporation Commission (OCC) staff have either met or exceeded most of the FY00 UIC grant workplan commitments. However, the number of Mechanical Integrity Tests (MITs) performed and witnessed are below the FY00 workplan targets that were based on 1999 well inventory values. Since all Class II injection wells must demonstrate mechanical integrity at least once every five years, the current targets for these field activities may need revision during FY01 based on significantly reduced well inventory values. In addition, the quality and timeliness of both quarterly and semi-annual UIC violation summaries required in the grant workplan need additional attention. The Region anticipates using the UIC violation summaries to further evaluate the effectiveness of OCC's UIC enforcement actions. A list of wells undergoing various enforcement actions for mechanical integrity violations was provided as an addendum to the State program's annual reports for FY98, FY99, and FY00, but does not provide enough information to address current oversight concerns.

In response to OCC's May 9th letter, our shared primary objective is an expeditious resolution of all outstanding UIC issues associated with the implementation of Oklahoma's Class II UIC program. Since EPA's review of OCC's UIC Primacy program, OCC management and staff have worked diligently to address historical problems with the State's UIC data management system and reported well inventory values. However, many other fundamental UIC issues must also be resolved, including:

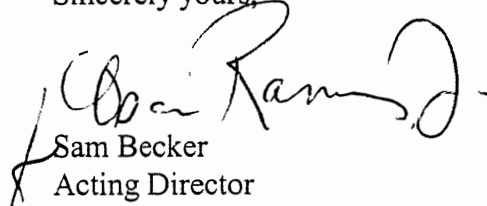
1. Area of Review/Zone of Endangering Influence and required corrective action;
2. Operator compliance with annual reporting requirements;
3. Management of abandoned/orphaned injection wells;
4. Adequacy of financial assurance for closure of UIC wells.

The end-of-year evaluation also provides information related to several unresolved commitments from our 1998 Agreement. Recognizing the recent OCC effort to address data management deficiencies, our oversight approach continues to be one of cooperation with the State program. As proposed in OCC's May 9th letter, I welcome open discussion between our respective staff and management concerning all UIC implementation issues.

Item C.1 of our 1998 Agreement provided OCC with an opportunity to submit a draft program revision package. OCC staff submitted the State program's draft revision to Region 6 in December 1998. Since that time, we have reviewed and worked with your staff toward resolution of several important implementation issues related to OCC's draft program revision. We anticipate providing substantial comment on the draft revision to the State program before July 31, 2001. Hopefully, together we can achieve resolution of all outstanding issues through the program revision process.

We look forward to strengthening the UIC partnership between EPA and OCC as we cooperatively strive to resolve some difficult ground water protection issues. If you have any questions, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Phil Dellinger at (214) 665-7165, or Mike Frazier at (214) 665-7236, if they have questions or need assistance in resolving any end-of-year evaluation issues.

Sincerely yours,


Sam Becker
Acting Director
Water Quality Protection Division

Enclosure

cc: Mike Schmidt, OCC Deputy Director, Oil and Gas Division, w/enclosure
Tim Baker, OCC Pollution Abatement Manager, w/enclosure
Rod Davari, OCC UIC Manager, w/enclosure

**EPA REGION 6 END-OF-YEAR (EOY) EVALUATION
OKLAHOMA CORPORATION COMMISSION (OCC)
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM**

**State Fiscal Year 2000 (FY00)
July 1, 1999 - June 30, 2000**

This report details the evaluation of activities of the Oklahoma Corporation Commission (OCC) toward meeting the FY00 UIC grant workplan commitments between July 1, 1999 and June 30, 2000, and the implementation of the applicable State UIC program approved by EPA. On September 20, 2000, EPA Region 6 representatives met with OCC management and staff for EOY evaluation discussions. This report is in three sections: FY00 UIC grant workplan commitments and accomplishments, UIC program oversight issues, and OCC's May 9, 2001, letter and response comments (see Attachment 1) to EPA's draft EOY dated March 28, 2001.

FY00 GRANT WORKPLAN:

FY00 Grant Award—The approved Federal FY00 UIC grant allotment for the State of Oklahoma's Class II UIC program is \$348,300, awarded in November 1999. EPA also awarded an additional \$508 from the FY99 OCC UIC grant in March 2000, bringing the total FY00 award to \$348,808. The amount of EPA grant money allocated each year to individual State UIC primacy agencies is based on a nationally applied formula which includes several factors such as the number of operable wells regulated, land area of the state, and census population. National funding levels have remained static for several years, but OCC received the fourth highest grant of any of the Class II State primacy agencies for FY00. OCC reports that the UIC grant still only provides approximately 30% of the total funds required to implement the State Class II UIC program.

Quality Assurance Annual Updates—Although due in March 2000, the FY00 OCC UIC Quality Assurance Project Plan (QAPP) annual update was requested by EPA via e-mail on July 11, 2000. OCC submitted the QAPP update documents on July 12, 2000. Since EPA's initial review required changes, OCC subsequently submitted an amended QAPP on January 16, 2001. EPA returned comments to OCC on February 15, 2001. Another revised QAPP was expected on or before March 6, 2001, as requested in our letter dated February 15, 2001. OCC re-submitted the QAPP via e-mail on June 6, 2001, and EPA requested additional information on June 15, 2001. Correspondingly, the annual Quality Management Plan (QMP) update for FY00 was due in January 2000, submitted in June 2000, and subsequently approved in July 2000 (see Table 1).

FY00 Grant Accomplishments and Deliverables—The Significant Non-Compliance (SNC) and UIC violation summaries for FY00 [Workplan Tasks 600, 610, and 620] appear incomplete and were not submitted according to schedule in the FY00 UIC grant workplan. This issue is discussed more thoroughly in the program oversight portion of this report.

The total number of 2-part mechanical integrity tests (MITs) conducted during FY00 falls well below the grant workplan target of 3,200 (see Table 2). The workplan target represents approximately 20% of the FY99 well inventory value of 15,610 operable Class II injection wells. Approximately one-fifth (20%) of the well inventory should be tested for mechanical integrity each year in order to meet the minimum 5-year MIT requirement at OAC 165:10-5-6. EPA recognizes the major effort expended by OCC staff during FY00 toward correcting historical problems with the State programs data management system. Until undertaking this effort, the State program reported larger well inventory values for operable wells because of the historical deficiencies in the UIC data management system.

In FY00, OCC undertook a major field verification effort to re-evaluate the number of operable Class II injection wells. Based upon the results of that effort, OCC reported an annual inventory of 11,484 operable injection wells for year 2000, a 27% reduction from the previous year. Even though OCC's MIT activities fell below the FY00 grant workplan target, the 2,415 two-part MITs witnessed during FY00 exceed 20% of the reported 2000 annual inventory. Two-part MITs include a pressure test of the annulus between the injection tubing and the well casing, and a verification that no vertical channels exist between the casing and the well bore that could provide a path for upward migration into protected fresh water zones. The FY01 mid-year evaluation process will re-evaluate the FY01 grant workplan MIT target using the current inventory value.

OCC staff are commended for exceeding the grant workplan target in the areas of UIC inspections and compliance reviews. OCC made the operational verification of all Class II wells in its electronic database a top priority during FY00. The large number of reported UIC inspections and compliance reviews reflect that effort.

FY01 UIC Grant Allocation—Based on OCC's 1999 inventory value of 15,610 Class II injection wells, EPA's calculated grant allocation for OCC's UIC program during fiscal year 2001 (FY01) is \$353,720, (awarded in March 2001). The FY02 grant allocation will be calculated using the reported 2000 inventory of 11,448 Class II wells. The Region anticipates discussions with EPA Headquarters concerning the potential impact of this large inventory reduction on the FY02 UIC grant allocation.

Table 1. FY00 Grant Deliverables.

Grant Deliverable	Due Date	Date Received
Quarterly Reports (Forms 7520)	July 30, 1999, October 30, 1999, January 31, 2000, and April 30, 2000	July 23, 1999, November 23, 1999, March 29, 2000, and June 6, 2000
FY01 Draft Grant Workplan/Application	May 1, 2000	May 3, 2000
FY01 Final Grant Workplan/Application	June 2, 2000	Received–June 15, 2000 Approved–July 24, 2000
* Annual QMP/QAPP Updates	QMP - January 12, 2000 QAPP - May 20, 2000	QMP received–June 29, 2000 , Approved–July 3, 2000 QAPP updated–January 16, 2001 , EPA comments to State program February 15, 2001
SNC Violation Summary (Task 620)	Quarterly, as required	† FY99 and FY98 reported October 31, 2000 FY00–October 13 and November 28, 2000
UIC Violation Summaries (Tasks 600,610)	January 12, 2000, June 30 2000	† FY99 and FY98 reported October 31, 2000 FY00–October 13 and November 28, 2000
Annual UIC Program Report (FY00)	July 30, 2000	October 16, 2000
Final Financial Status Report (FY00)	September 30, 2000	January 19, 2001
Annual UIC Enforcement Agreement	May 1st of each year with Draft workplan submission	6EN has determined that a formal agreement is not necessary at this time
UIC Annual Inventory	Annually as requested by EPA	Received October 25, 2000, and January 2, 2001
UIC Regulatory/Statutory Update	July 30, 2000	October 16, 2000

* Even though the QAPP and QMP are due at different times, EPA recommends that OCC submit both updates with the draft application workplan because the QMP must be reviewed and approved before the grant can be awarded.

† SNC and UIC Violation Summaries not submitted timely, nor sufficient to determine adequacy of enforcement actions.

NOTE: Items in bold reflect substantially late or inadequate submission.

Table 2. Program activities, FY99 targets, end-of-year values and percent accomplished.

Program Activity	FY00 TARGET	End-of-Year Values	Target %
INSPECTIONS (On-site)	10,000	16,484	165
(Complaint Related)	95	140	147
MITs (2-part) (Total)	3,200	2415	75 **
(Witnessed)	2,880	2415	84
COMPLIANCE REVIEWS (total)	3,200	4398	137
(commercial operations)	219	216	99
(complaint investigations)	300	165	55
PERMITS (Total Issued)	300	199†	66
TECHNICAL REVIEWS	500	262	52
OWNERSHIPS TRANSFERRED *	1,200	1,085†	90
PUBLIC HEARINGS	75	70†	93
(Staff attended public hearings)	15	18	120
TECHNICAL CONFERENCES	60	90	150

† Values determined by number of operator applications and requests for public hearings.

* 154 applications to transfer ownership were rejected.

** See discussion on Page 2

NOTE: Items in bold reflect MIT shortfalls directly related to OCC field activities; other significant shortfalls are directly related to the number of permit applications, complaints, and associated public hearings.

FY00 PROGRAM ISSUES:

Annual UIC Inventory Accuracy—During 1997, OCC staff initiated a self-evaluation of its UIC program to resolve concerns raised in EPA's 1997 comprehensive review of Oklahoma's Class II primacy UIC program. As part of addressing general non-compliance of Class II well operators with the reporting requirements of OAC 165:20-5-7 (annual monitoring report), OCC UIC staff evaluated the operational status of Oklahoma's Class II well inventory. OCC's 1997 inventory evaluation produced a 22 percent decrease in the number of active Class II wells in Oklahoma (see Table 3).

As part of EPA's annual evaluation of OCC's UIC program for FY99, the cumulative number of Class II mechanical integrity tests (MITs) conducted during sequential five-year periods were compared to reported annual Class II inventories since 1995. Those comparisons indicate that as many as 2,000 active Class II wells may not have been tested pursuant to the MIT frequency requirements of OAC 165:10-5-6. Subsequently during FY00, OCC initiated a field verification program to validate the condition of each Class II well in Oklahoma. The verification program determined an actual number of active Class II wells nearer 11,500—a 49 percent reduction from the all-time high of 22,253 injection wells reported in 1996. OCC also found that most of the approximately 11,000 non-operable Class II wells were also abandoned without authority (orphaned), adding to an already large number of abandoned oil and gas wells for which the State must assume plugging responsibility. Since 1999, OCC terminated the UIC orders (i.e., permits) for over 6,000 orphaned injection wells.

Placing the burden of plugging any injection well clearly on the operator is fundamental to any EPA approved UIC program. Any UIC program's management of operator's financial responsibility should ultimately assure proper closure of the permitted well, and the operator's responsibilities should be specifically addressed in the permit itself. In most cases, the financial assurance required by Oklahoma's Class II program appears inadequate when an operator fails to properly plug a well.

EPA believes that the historical problems with the accuracy of OCC's UIC database are principal to understanding the effectiveness of the State's UIC program. Even though OCC recognizes the historical problems and is implementing positive changes, the inaccurate UIC inventory values continue to influence fundamental compliance factors used in measuring surveillance and enforcement performance. The lack of adequate financial assurance appears to be the primary reason for inadequate resources to plug abandoned injection wells. The financial assurance requirement is discussed in more detail on page 9 of this report.

Table 3: Number of Class II MITs (2-part) conducted between FY91 and FY00, annual inventory, and well variance between number of five-year MITs and annual inventory.

Fiscal Year	‘00	‘99	‘98	‘97	‘96	‘95	‘94	‘93	‘92	‘91
MITs (2-part) †	2,415	2,283	2,985	2,244	3,284	2,945	2,595	2,533	3,418	3,135
Cumulative 2-part MITs (5-year cycles)	13,211	10,796	8,513	5,528	3,284	--	--	--	--	--
		13,741	11,458	8,473	6,229	2,945	--	--	--	--
			14,053	11,068	8,824	5,540	2,595	--	--	--
				13,601	11,357	8,073	5,128	2,533	--	--
					14,775	11,491	8,546	5,951	3,418	--
						14,626	11,681	9,086	6,553	3,135
Well Inventory ♦ (maximum and minimum in bold)	11,448	15,610	15,995	17,351	22,253	21,593	21,540	21,350	21,658	--
% annual change (+/-) % change from 1996	- 27 - 49	- 2.4	- 7.8	- 22	3.1	0.25	0.9	- 1.4	--	--
Difference between Class II Well Inventory and Cumulative 5-year MITs	1,763	(1,869)	(1,942)	(3,750)	(7,478)	(6,967)	—	—	—	—

† MIT values as submitted in end-of-year program evaluations.

♦ Injection well inventory as reported by OCC annually; used in UIC grant funding formula.

Annual Reporting by Well Operators—EPA discovered a less than acceptable operator compliance with OAC 165:20-5-7 during its 1997 primacy program review. Between 1997 and 2000, OCC attempted to address this issue through voluntary compliance by sending non-compliance letters to all delinquent operators. In an effort to assist the State program, EPA proposed (via letter of July 27, 2000) to request non-compliant operators to submit delinquent annual monitoring reports to the State program using its information gathering authority under Section 1445 of the Safe Drinking Water Act (SDWA). An OCC compliance report dated October 18, 2000, showed a reduction of non-compliant *Class II wells* from 50% on July 18, 2000, to 8.6% on September 20, 2000. Subsequently on October 26, 2000, Region 6 accepted OCC's proposal to provide additional time for OCC to act (in lieu of EPA sending compliance letters) and requested a compliance status report during December 2000. The compliance report dated December 22, 2000, conveyed OCC's confidence "that the compliance rating will improve even further as we improve the quality of the data in our information management system; in order to locate the responsible parties and enforce timely reporting."

OCC's December 2000 compliance report listed 494 non-compliant operators representing 613 Class II wells, approximately 32% of Class II operators in Oklahoma (494 of 1,545 operators, January 9, 2001, e-mail correspondence) and 5.3 percent of the reported Class II well inventory for 2000 (613 of 11,448). Based on OCC's positive actions toward addressing the general non-compliance with OAC 165:20-5-7, Region 6 has to date postponed any federal intervention using its SDWA oversight authority. However, the large percentage (32%) of operators that remain non-compliant is still of concern. Consequently, EPA's annual mid-year and end-of-year evaluations of OCC's UIC program will continue to review operator compliance with OAC 165:20-5-7 and OCC's corresponding enforcement actions.

Revocation of Injection Orders and AOR concerns—As a result of its efforts to validate an accurate UIC well inventory, OCC terminated the permits (OCC orders) for over 6,000 Class II injection wells during 2000. Generally, the State program was unsuccessful in locating the operators-of-record for these wells, resulting in the State assuming the responsibility for closure. This questions the effectiveness of the State's financial assurance requirements (discussed later in this report). The corresponding decision to terminate the UIC authority of the delinquent operator raises yet other concerns.

Since there is no apparent responsible party for this large number of former injection wells (over half the reported 2000 active inventory value of 11,448), the State program decided to formally terminate the OCC permit. In so doing, the State published public notice and held hearings as required by OAC 165:5 (Rules of Practice). However, no apparent technical evaluation (compliance review) was performed to determine if any abandoned injection wells fall within the pressure influence of another permitted injection facility. The responsibility of the operator to properly plug any abandoned wells within the pressure influence of an authorized injection well is a fundamental responsibility within any approved UIC program regardless of the type of well. If corrective action is not required (i.e., appropriate plugging or permit modification

to reduce pressure influence), the potential for fluid migration remains unaddressed. These comments are based on EPA's review of well files and conversations with OCC UIC management. EPA intends to discuss this compliance review issue with OCC's UIC staff during future evaluations. This issue may ultimately be resolved through EPA's comments on OCC's draft UIC program revision.

Quarterly Reports, SNC and Exceptions (Forms 7520)—At least since 1996, OCC's UIC grant workplan has included two compliance reports:

- ▶ A detailed quarterly summary of operators determined as Significant Non-Compliant (SNC) [UIC Workplan Task 620], and
- ▶ A semi-annual summary of the State's "response to UIC violations, detailing timing of such actions and resolution." [UIC Workplan Task 600, 610]

OCC has been late in submitting the reports as required in the UIC grant workplan (see Table 1, Page 3). In an effort to streamline the reporting process, the FY 00 Workplan was amended to provide for submission of these reports as addenda to the standardized EPA Forms 7520 reports submitted by all UIC programs.

Most recently, the State program submitted the UIC violation summaries for FY98 and FY99 on October 31, 2000, and a single UIC violation summary for FY00 on October 13, 2000, as part of the State program's required annual UIC report. An addendum to the State's FY00 annual report on November 28, 2000, provided the dates of violation and compliance of only those wells in various enforcement stages for MIT violations, including several wells with long-term non-compliance. All three submissions reported no wells in the SNC category for FY98, FY99, or FY00; the transmittal letter for FY98 and FY99 (dated October 31, 2000) states, "We have completed our review of the Violation Summaries and have found no SNC Violation to report for the periods cited." However, EPA Forms 7520-2B (UIC SNC Compliance Report) for FY98 (dated October 30, 1998), FY99 (dated November 23, 1999), and FY00 (dated November 30, 2000) show a reported 18 wells in FY98, 44 wells in FY99, and 17 wells in FY00 with SNC violations—a clear discrepancy with the grant-required violation summaries for all three fiscal years.

In addition, the submitted form 7520-2B for the first-half of FY00 (from October 1, 1999 through March 31, 2000) indicates 34 wells with SNC violations (dated May 30, 2000), while the cumulative 7520-2B dated November 30, 2000, reports only 17 SNC violations between October 1, 1999 and September 30, 2000. EPA's 7520 forms represent cumulative values over the Federal fiscal year.

Correspondingly, all 7520-5's (quarterly Exceptions List) submitted by the State program

during FY98, FY99, and FY00, indicate no Exceptions. Exceptions are SNC violations that remain unresolved for two consecutive quarters. A comparison of the submitted UIC violation summaries for FY98, FY99, and FY00, shows several individual injection wells that remain in significant non-compliance for MIT violations, i.e., Exceptions.

The inconsistency in OCC's compliance reporting to EPA indicates that improvements are needed in surveillance, enforcement, and reporting of non-compliance, SNC, and Exceptions. Future compliance reports should be timely, in the format required by the UIC grant workplan, and represent an effective Class II program. In order to address this issue, EPA strongly recommends that the State program re-evaluate its current procedures related to these compliance and reporting activities.

The 7520 reports are used by EPA to gather compliance assurance information on a national scale. If the reported values are inconsistent and not representative, then the assumptions made from the reported data are compromised. Apparently, some of the data fields requested by EPA do not correspond with the data fields collected by the State program. Therefore, the State program should assure that the reported data is in fact the data requested on EPA Forms 7520, and make appropriate modifications to its electronic database to track and report those data fields. Only then can the impact of the State's UIC program be reflected in a national scope.

Operator Financial Assurance—Based upon the large number of recently orphaned injection wells (see previous well inventory discussion), the current financial assurance requirements appear largely inadequate to assure appropriate financial responsibility from Class II injection well operators. For Type A surety, non-commercial Class II injection well operators are required to file an annual financial statement showing net worth of \$50,000 using Form 1006A [OAC 165:10-1-10(a)(1)]. When a non-commercial operator goes out of business or chooses to abandon a permitted injection well, the financial statement is virtually worthless, leaving the State program with the responsibility of plugging abandoned wells using limited state funds. Type B surety requires an “irrevocable letter of credit, cash, a cashier's check, a certificate of deposit, bank joint custody receipt, or other approved negotiable instrument, or a blanket surety bond” for the general amount of \$25,000 [OAC 165:10-1-10(a)(2)]. In addition to Form 1006A, operators are also required to file Form 1006B, Operator's Agreement to Plug Oil , Gas, and Service Wells Within the State of Oklahoma [OAC 165:10-1-11]. The State UIC program Director may accept a single financial assurance instrument for any number of operating injection wells. During the end-of-year discussions, State program personnel could not recall any instances where OCC successfully enforced the financial assurance requirement for plugging an abandoned injection well.

If the State program required an irrevocable letter of credit from the operator's financial institution or required a permanent surety bond assigned to the State program, the assurance of available funds to timely and adequately plug abandoned wells by the State program would be

more certain. As far back as 1995, EPA recognized the basic inadequacy of OCC's current financial assurance requirements in EPA's annual mid-year and end-of-year evaluations. Appropriate financial assurance that insures proper plugging of wells upon abandonment is a fundamental criteria in determining the effectiveness of any Class II State program [46 Fed. Reg. 27333, 27338, May 19, 1981]. Therefore, EPA strongly recommends that OCC amend its current financial assurance requirements to provide for effective plugging of the very large number of abandoned injection wells. EPA anticipates discussion of this issue with OCC UIC staff during future oversight activities.

New SB 1048 well plugging statutory amendment—The 2000 Oklahoma Legislature amended Title 17 O.S., Supp.1998, Section 53., through Senate Bill 1048 [former S.B. 1010 (1998)]. S.B. 1010 tied the plugging of oil and gas wells in Oklahoma to the price of crude oil. Subsequently, S.B. 1048 removed the price of crude oil and substituted language that restricts OCC's authority to require the plugging of any oil and gas well located on a producing oil and gas lease. The amended statute now reads:

“The Corporation Commission is hereby authorized to promulgate rules for the plugging of oil and gas wells. Abandoned wells shall be plugged under the direction and supervision of Commission employees as may be prescribed by the Commission. Provided, however, the Commission shall not order any oil or gas well to be plugged or closed if the well is located on an otherwise producing oil or gas lease as defined by the Commission, unless such well poses an imminent threat to the public health and safety which shall be determined by the Commission after conducting a public hearing on the matter.”

Exactly how this statutory revision and associated rules impact Class II injection wells will be visited during EPA's review of OCC's draft Class II UIC program revision. The SB 1048 legislation is not part of Oklahoma's draft program revision. The Agency typically raises new program implementation issues through annual program evaluations, either mid-year or end-of-year. EPA anticipates that this issue will be addressed through the program revision process outlined in 40 CFR §145. An update of EPA's review of the draft program revision is provided elsewhere in this report.

Oversight File Reviews—EPA UIC oversight staff discussed several injection wells related to citizen complaints with OCC staff on September 21, 2000. Information gathered during those discussions and from associated file reviews is presented below:

W.B. Hoppes Oil Company, State School Land #2—In April 1992, OCC requested the applicant to submit information on any wells penetrating the injection zone only within ½-mile from the injection well, the Primacy program area of review (AOR) approved by EPA in 1981. Concerned citizens protesting the original permit application argued that

the calculated pressure influence using the requested injection rate created a pressure radius approximately 5,000 feet from the injection well. This Class II non-commercial disposal well was authorized for injection through OCC Order number 364903 on April 22, 1992.

EPA's review of the administrative record associated with OCC Order No. 364903 indicates that no corrective action was required even though approximately six wells (identified as "problem wells" in OCC's records) within the ½-mile AOR. In addition, no plugging records exist for at least two other abandoned oil and gas wells within the original fixed ½-mile AOR.

We believe the State program's ZEI calculation is incorrect because the initial bottom hole pressure of the injection zone is not considered. Conservatively, an initial bottom hole pressure in the Layton Formation at an injection depth of 1,072 feet would be between 200 and 300 psi. Using a conservative permeability of 2.3 md and 14.5 percent porosity, a more realistic ZEI is nearer a 7,000 feet radius, an even larger area of review.

This program implementation concern appears in the Region's 1997 comprehensive review of OCC's UIC Primacy program. Correspondingly, the purpose of Commitment B.4 in the associated 1998 Agreement between EPA and OCC was to estimate the history of this practice. The information submitted by OCC staff in response to Commitment B.4 showed no calculated ZEI beyond the initial fixed radius. We strongly believe the practice of using a zero initial formation pressure is inherently wrong and contradicts the ZEI calculation parameters at 40 CFR §146.6. As a permit condition, the 1981 EPA approved Primacy program description (PD) also requires corrective action within the pressure influence of a proposed Class II injection activity (page 23-24 of PD).

OCC's use of zero as an initial formation pressure has been an issue since the early '90s. An initial reservoir pressure of zero is extremely unlikely and would be associated with a hydrostatic head of zero in the proposed injection zone. That situation would only exist if the proposed injection zone contained no formation fluid, i.e., all apparent pore space filled with gas not liquid. This issue is further addressed on page 8 of EPA's publication entitled Radius of Pressure Influence of Injection Wells, EPA-600/2-79-170.

In this particular case, necessary corrective action was not required within the standard fixed radius and within the larger pressure influence. Although OCC performed a zone of endangering influence (ZEI) calculation that shows a pressure radius of approximately 5,000 feet, OCC permitted the well at a rate of 200 barrels per day at a maximum injection pressure of 300 psi. Therefore, EPA highly recommends that OCC create a plan to re-evaluate this and other previously permitted injection activities.

EPA is currently reviewing OCC's draft Class II UIC program revision which includes the current practice of ignoring the pressure influence calculation. EPA believes the area reviewed for potential corrective action should reflect the pressure radius when an appropriate ZEI calculation exceeds the fixed AOR [46 Fed. Reg. 48243, 48246, October 1, 1981, and 49 Fed. Reg. 45292, 45301, November 15, 1984]. While previous EPA annual evaluations of OCC's UIC program include discussions of this issue, EPA plans resolution through its review of OCC's draft Class II program revision.

E.L. Thomas–M. Johnson#1, PD#200000244-T –The initial public notice dated July 5, 2000, for this UIC permit application listed no well owner or operator. In addition, the notice stated, "Objections may be filed with the Oklahoma Corporation Commission, within 15 days of this notice", and listed the name and address of the assumed consultant representing the operator. The operator was notified and required to republish the notice. This incorrect public notice form was included in the Region's 1997 comprehensive review of OCC's UIC Primacy program.

The operator filed an OCC Form 1015A requesting to amend existing Order 414445 to increase the rate and pressure from 300 b/d at 0 psi to 500 b/d at 300 psi. To allow the operator relief as the formal application proceeded through the permitting process, the OCC issued Emergency Order Number 442756 on July 12, 2000. The emergency permit allowed a rate of 500 b/d at 350 psi until September 12, 2000. The emergency permit had expired by the date of EPA's evaluation and associated discussion, September 21, 2000. OCC staff indicated that approximately four mud-plugged wells had been identified within ¼-mile of the permitted injection well with no corresponding corrective action being required by the State program.

In 1997, the initial UIC permit allowed no pressure, only gravity injection. In order to clearly understand OCC's actions related to this authorized injection activity, EPA will review the complete technical and administrative record on this injection well during its FY01 evaluation.

Mechanical Integrity Surveillance—All Class II injection wells are required to be tested for mechanical integrity prior to operation and subsequently a minimum of every five years (OAC 165:10-5-6). As part of our mid-year program evaluation performed in April 2000, EPA performed a random file review of current MITs in three Oklahoma counties. The end-of-year visit in September 2000 included a follow-up of OCC's surveillance of these non-compliant injection wells. EPA discovered that five "failed" wells had not been re-tested for mechanical integrity since initial failure in 1999 (see Table 4). Although OCC field personnel requested the operator's to cease injection, the reviewed records did not reflect any follow-up inspections to assure that the shut-in wells were not being used for injection. A review of OCC's database also revealed non-compliance with annual monitoring reports (OAC 165:20-5-7) for the Tag–Herman Frank #1 for 1998. Through a telephone message on October 3, 2000, OCC staff reported

expanding their investigation on the status of these five wells in Table 4 to the district level.

Based on this file review, EPA is concerned with the effectiveness of OCC's surveillance and compliance tracking of MITs. Our concern relates to whether OCC's compliance tracking procedures are adequate to assure that all Class II wells that fail an MIT are returned to compliance in a timely manner. OCC indicates that the surveillance of commercial disposal wells has been increased to once every three months since the beginning of 2001 and that in the future, surveillance of non-commercial facilities will increase initially to semi-annually and then quarterly.

EPA policy adopts the use of file reviews to determine the effectiveness of surveillance and enforcement activities. Based on the results of file reviews, the scope of identified problems may be further investigated through follow-up. Further oversight of OCC's MIT tracking and testing procedures are anticipated.

Table 4. Reviewed wells that failed MIT in FY99, Noble County, Oklahoma.

ORDER	OPERATOR	WELL	MIT Failure Date in 1999	Status September 2000
233519	Triad Energy Inc.	Bolay #1	April 6	not re-tested
265669	Pan Western Energy Corporation	NW Antelope #2 Tract 7 (Mississippian Chat)	August 25	not re-tested
265670	Pan Western Energy Corporation	NW Antelope #2 Tract 2 (Mississippian Chat)	August 25	not re-tested
322657	Tag Petroleum Inc.	Herman Frank #1	November 15	not re-tested
57366	Altex Resources	Brown #4	November 17	terminated—January 2000, no plugging records

Update of Draft Section 1425 Program Revision—As previously mentioned, Region 6 received a draft program revision from OCC in December 1998. OCC submitted the draft revision package as part of the 1998 agreement associated with EPA's comprehensive review of Oklahoma's Primacy Class II UIC program. Over the past two years, the Region and the State program have worked to fully understand several UIC implementation issues including but not limited to corrective action in the permitting process, AOR/ZEI determination, and annular injection of drilling mud.

The Region's UIC staff are preparing a direct comparison between EPA's effectiveness criteria for State Class II programs approved under SDWA Section 1425 [46 Fed. Reg. 27333, May 19, 1981], and OCC's current rules and regulations in OAC 165:10 and 165:5 that affect the State UIC program. Using this comparison, EPA will proceed with finalizing comments on OCC's draft Class II UIC program revision. The Region anticipates providing comments to the State program before July 31, 2001.

Update of Draft Section 1422 Program Revision—The Region is also reviewing a draft program revision submitted jointly by both OCC and Oklahoma's Department of Environmental Quality. The revision to that part of Oklahoma's UIC program approved under SDWA Section 1422 regulates UIC activities associated with Class I, III, IV and V injection wells. During 2000, the Oklahoma Legislature amended both the Oklahoma Brine Development Act and the Oklahoma Environmental Quality Act through SB 1223 to resolve apparent discrepancies between State and Federal UIC jurisdiction over certain Class V activities. OCC is requesting UIC Primacy authority for activities involving re-injection of brine subsequent to halogen removal and certain types of aquifer remediation activities associated with leaking petroleum storage tanks.

At EPA's request, both Agencies have submitted associated crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144-148. The Region anticipates providing comments to both State agencies before July 31, 2001.

ATTACHMENT 1

OCC letter and response comments of May 9, 2001 (6 pages)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733
MAR 01 2002

FY2001

Mr. Larry Fiddler, Acting Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

RECEIVED
OCC
MAR 1 11 45
ASSISTANCE PROGRAM BR.

Dear Mr. Fiddler:

The enclosed report summarizes EPA's evaluation of the performance of Oklahoma's Class II Underground Injection Control (UIC) program during state fiscal year 2001 (FY01). On August 16, 2001, Larry Wright, Philip Dellinger, Mike Frazier, and Mike Vaughan, visited OCC's offices and participated in discussions with Mike Battles, Mike Schmidt, Mike Decker, Tim Baker, and Rod Davari, concerning current UIC program implementation issues. Following EPA's November 20, 2001, request for comments, OCC submitted comments on a draft end-of-year (EOY) evaluation on January 4, 2002. The final EOY evaluation reflects changes in response to some of OCC's comments. The FY01 evaluation consists of two parts:

- FY01 UIC grant workplan commitments and accomplishments
- UIC program oversight issues

Oklahoma Corporation Commission (OCC) staff have either met or exceeded most of the FY01 UIC grant workplan commitments. With a reduction in the year 2000 active UIC well inventory values, the number of Mechanical Integrity Tests (MITs) performed and witnessed during FY01 are within acceptable limits. I commend OCC management and staff on their renewed focus on correcting deficiencies in Oklahoma's UIC database. Fundamental surveillance and enforcement actions depend on an accurate data management system. OCC's management approach is presented in OCC's UIC Annual Report for FY01, which we included as an appendix to our evaluation.

Since EPA's 1997 review of OCC's UIC Primacy program, OCC management and staff have worked diligently to address historical problems with the State's UIC data management system and reported well inventory values. However, many other fundamental UIC issues must also be addressed, including continued operator noncompliance with filing annual monitoring reports. Based on October 2001 information, at least one out of every five Class II wells in Oklahoma are not represented in annual monitoring reports for 1999 and 2000. Other issues include adequate corrective action within the pressure influence of permitted injection wells and financial assurance to assure the plugging of abandoned/orphaned UIC wells. Our oversight approach continues to be one of cooperation between our respective staff and management concerning all UIC implementation issues.

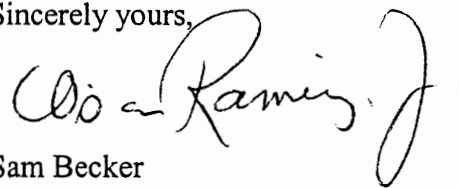
1445 D-
CONFIDENTIAL

During our EOY evaluation visit in August 2001, an informal discussion between our staffs did propose an "Area of Review Summit" hosted by Region 6 and including representatives from all Region 6 State UIC programs. The exchange of ideas in a workshop setting may help both EPA and State UIC programs better understand the applicability of calculating the potential impact of pressure increases resulting from long-term injection practices. We recognize your interest in resolving this lingering oversight issue and request your patience as we evaluate the feasibility of meeting with all State UIC programs.

Our 1998 Agreement provided OCC with an opportunity to submit a draft program revision application that includes some of the issues mentioned above. OCC staff submitted the State program's draft revision to Region 6 in December 1998. Since that time, we have reviewed and worked with your staff toward resolution of several important implementation issues related to OCC's draft program revision and introduced the issues for discussion between other regions and EPA Headquarters staff. During the FY01 EOY visit, my staff also committed to provide a formal response to the State program before the end of 2001. Although we have not met that goal, my staff continues to prepare comments on both draft revisions to Oklahoma's UIC program. Currently, we anticipate providing comments to OCC on both draft State UIC program revisions (SDWA 1422 and 1425) during the first quarter of 2002. I remain confident that together we will address all significant UIC issues through the program revision process.

Our UIC oversight actions will continue in the spirit of partnership with each State UIC program. Those partnerships must assure that underground sources of drinking water are adequately protected from underground injection activities as mandated by the Safe Drinking Water Act. If you have any questions concerning program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Phil Dellinger at (214) 665-7165, or Mike Frazier at (214) 665-7236, if they have UIC oversight questions, or Michael Vaughan at (214) 665-7313 about any grant related matters.

Sincerely yours,


f Sam Becker
Acting Director
Water Quality Protection Division

Enclosure

cc: Mike Schmidt, Deputy Director, Oil and Gas Division, w/enclosure
Oklahoma Corporation Commission

Tim Baker, Pollution Abatement Manager, w/enclosure
Oklahoma Corporation Commission

Rod Davari, UIC Manager, w/enclosure
Oklahoma Corporation Commission

**EPA REGION 6 FISCAL YEAR 2001 (FY01) END-OF-YEAR (EOY) EVALUATION
OKLAHOMA CORPORATION COMMISSION (OCC)
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM**

This report details the evaluation of activities of the Oklahoma Corporation Commission (OCC) toward meeting the FY01 UIC grant workplan commitments between July 1, 2000 and June 30, 2001, and the implementation of the applicable State UIC program approved by EPA. On August 16-17, 2001, EPA Region 6 representatives met with OCC management and staff for EOY evaluation discussions. This report is in two sections: FY01 UIC grant workplan accomplishments and UIC program oversight issues.

FY01 GRANT WORKPLAN:

FY01 Grant Issues—The approved Federal FY01 UIC grant allotment for the State of Oklahoma's Class II UIC program is \$353,720. This was awarded to the Oklahoma Corporation Commission on March 30, 2001. The amount of EPA grant money allocated each year to individual State UIC primacy agencies is based on a nationally applied formula which includes several factors such as the number of operable wells regulated, land area of the state, and census population.

FY02 UIC Grant Issues—EPA's tentative grant allocation for OCC's UIC program for fiscal year 2002 (FY02) is \$318,100. On September 6, 2001, \$27,300 was awarded to OCC toward their FY02 grant application. The FY02 grant application will be fully funded when Region 6 receives the FY02 allocation from Headquarters. OCC did apply for \$1,081,449 in Federal funds for FY02, but only \$318,100 of Federal funds is available to be awarded for the FY02 UIC grant.

Quality Assurance Issues—The Quality Assurance Project Plan (QAPP) was submitted on August 30, 2000, and following several revisions the QAPP was approved on October 18, 2001. The Quality Management Plan (QMP) was received on November 7, 2001, and was approved on November 21, 2001.

Table 1. FY01 Grant Deliverables.

<i>Grant Deliverable</i>	<i>Due Date</i>	<i>Date Received</i>
Quarterly reports (Forms 7520)	7/30/2000, 10/30/2000, 1/31/2001 and 4/30/2001	9/18/2000, 12/04/2000, 2/02/2001, 5/03/2001
FY2002 Draft Grant Workplan/Application	5/01/2001	Received 5/03/2001
FY2002 Final Grant Workplan/Application	6/02/2001	Received 7/30/2001
*Annual QMP/QAPP Updates	QMP due 10/25/2001 QAPP due on 9/12/2000	QMP received 11/07/2001; Approved 11/21/01 QAPP submitted 8/30/2000; EPA approved QAPP on 10/18/2001 following several revisions.
SNC Violation Summary	Quarterly, as required	submitted with quarterly reports on 12/04/2000, 5/03/2001
UIC Violation Summary	1/12/2001, 6/30/2001	Submitted with quarterly reports on 12/04/2000, and 5/03/2001
Annual UIC Program Report	7/30/2001	Received on 8/10/2001
Final Financial Status Report	9/30/2001	Received 7/17/2001
UIC Annual Inventory	Annually as requested by EPA - not requested by EPA as of 10/17/2001	
UIC Regulatory/Statutory Update	7/30/2001	Received on 8/03/2001

** Even though the QAPP and QMP are due at different times, EPA recommends that OCC submit both updates with the draft application workplan because the QMP must be reviewed and approved before the grant can be awarded.*

Table 2. Program activities, FY01 targets, end-of-year values and percent accomplished.

<i>Program Activity</i>	<i>FY2001 Target</i>	<i>Mid-year values (July 1, 2000 - December 31, 2000)</i>	<i>End-of-year values (July 1, 2000 - June 30, 2001)</i>	<i>Target %</i>
Inspections (On-site)	10,000	6,271	13,562	136
(Complaint related)	300	70	150	50
MITs (Total)	3,000	860	2,010	67
(Witnessed)	2,880	823	1,928	67
Compliance Reviews (total)	3,200	3,028	7,128	223
(commercial operations)	210	50	210	100
(complaint investigations)	300	70	150	50
* PERMITS (Total Issued)	300	121	188	63
TECHNICAL REVIEWS	300	263	574	191
OWNERSHIP TRANSFERRED	1,200	615	929	77
PUBLIC HEARINGS				
(Staff attended public hearings)	35 **	20	35	100
TECHNICAL CONFERENCES	60	48	84	140

** Permits are lower than anticipated, because some of these permits are third-party generated, and are addressed as received.*

*** Estimated*

FY01 PROGRAM ISSUES:

Annual UIC Inventory Accuracy—Beginning in FY00, OCC field inspectors have now verified the operational status of every Class II well in Oklahoma because a significant number of operators did not submit the required annual injection report. During FY01, the State program continued implementing policy and procedural changes that have resulted in a more accurate well inventory and better UIC data quality. As a result of those changes, OCC's reported Class II well inventory has decreased by approximately 50% since 1996 (see Table 3). In addition, the field reconnaissance program resulted in OCC vacating authority (i.e., revoking permits) for over 6,000 orphaned injection wells during FY00 and FY01. An accurate UIC well inventory has greatly improved the validity of OCC's data management system. OCC staff continue their efforts to not only further improve the quality of the UIC data management system but also the system's compliance tracking capabilities.

Annual Reporting by Well Operators—Since being identified as a program deficiency in EPA's 1997 primacy program review, OCC has increased enforcement efforts to assure operator compliance with the reporting requirements of OAC 165:20-5-7. The most significant result of these efforts is a more accurate well inventory value for year 2000, submitted in December 2000. In letters dated October 2 and December 22, 2000, OCC reported operator compliance with OAC 165:20-5-7 for 1999 at 92% and 95%, respectively. In response to an EPA oversight follow-up request, OCC staff provided updated values for 1999 and 2000 reports on October 19, 2001 (see Table 4). The October 2001 compliance values for calendar year 1999 represent approximately 80% of the reported active Class II well inventory for 2000, approximately 15% less than the compliance values previously reported in October and December 2000. OCC staff explained that the previous compliance values (92% in October 2000 and 95% in December 2000) included the number of wells transferred to new operators (1,226) and the number of newly permitted wells (257) during 1999. OCC UIC orders issued in the current year are also entered into the UIC data management system as "active" wells, but may or may not begin actual operations for up to 18 months according to OCC rules. OCC also considers newly authorized injection wells and existing active wells that have been transferred to new operators as compliant with respect to the operator's annual reporting requirement at OAC 165:20-5-7.

Per the federal requirements of 40 CFR §§ 144.28(h) and 146.23(c), every Class II operator is required to submit an annual report of authorized well operations to the applicable State UIC program regardless of whether the well is used for injection. Operators of both active and inactive wells must submit reports annually. Operators of transferred wells (both previous and current operator) must submit an annual report that covers the time that they operated the injection well. Operators of newly permitted wells must also submit an annual report even though the well may not have injected during the reporting period. This required self-reporting provides an injection history for all authorized injection, allowing each State UIC program to determine operator compliance with permitted injection parameters.

Table 3: Number of Class II MITs (2-part) conducted between FY92 and FY01, annual inventory, and well variance between number of five-year MITs and annual inventory.

Fiscal Year	‘01	‘00	‘99	‘98	‘97	‘96	‘95	‘94	‘93	‘92
MITs (2-part) †	2,010	2,415	2,283	2,985	2,244	3,284	2,945	2,595	2,533	3,418
Cumulative 2-part MITs (5-year cycles)	11,937	9,927	7,512	5,229	2,244					
		13,211	10,796	8,513	5,528	3,284	--	--	--	--
			13,741	11,458	8,473	6,229	2,945	--	--	--
				14,053	11,068	8,824	5,540	2,595	--	--
					13,601	11,357	8,073	5,128	2,533	--
						14,775	11,491	8,546	5,951	3,418
							14,626	11,681	9,086	6,553
Well Inventory ♦ (maximum and minimum in bold)	11,368 ♣	11,448	15,610	15,995	17,351	22,253	21,593	21,540	21,350	21,658
% annual change (+/-) % change from 1996	-1 -49	- 27 - 49	- 2.4	- 7.8	- 22	3.1	0.25	0.9	- 1.4	--
Difference between Class II Well Inventory and Cumulative 5-year MITs	569	1,763	(1,869)	(1,942)	(3,750)	(7,478)	(6,967)	—	—	—

♣ Unofficial inventory value reported in October 2001.

† MIT values as submitted in end-of-year program evaluations.

♦ Injection well inventory as reported by OCC annually; used in UIC grant funding formula.

The current compliance values reported for year 2000 indicate that operators of approximately 78% of Oklahoma's Class II wells currently comply with OAC 165:20-5-7, indicating that about 22% of Oklahoma's Class II wells are non-compliant with the reporting requirement (see Table 4).

Table 4. A comparison of OCC's UIC well inventory with operator compliance in submission of annual monitoring reports [OAC 165:10-5-7], between 1997-2000.

YEAR	REPORTED UIC ANNUAL WELL INVENTORY	UIC WELLS REPRESENTED IN REPORTS	PERCENT COMPLIANCE
2000	11,448	8,936 †	78%
1999	15,610	9,118 †	58% (80%)♣
1998	15,995	8,093	51%
1997	17,351	8,334	48%

† Values reported as of October 19, 2001. ♣ Percent of 2000 inventory value. Shaded rows repeated from FY99 EOY.

In addition to the collection of annual monitoring reports by UIC State Primacy programs, the reports should also be reviewed for compliance with permit conditions. EPA's UIC compliance strategy for State Primacy and EPA administered programs (March 31, 1987), states:

“Careful review of the owner/operator reports can lead to the identification of potential noncompliance, e.g., an owner /operator injection at pressures exceeding the authorized injection pressure. Reports should be reviewed individually and then compared to previous reports to reveal possible or actual noncompliance, e.g., detection of possible leaks in a well deduced from pressure fluctuations in a series of monitoring reports. Each Region and State should have written procedures on how monitoring reports will be reviewed and what actions will be taken to resolve any noted noncompliance.” [page 14]

The strategy also provides guidance on appropriate enforcement actions for various types of operator noncompliance. For failing to monitor and report required monitoring data, appropriate enforcement actions range from a warning letter to civil or criminal actions.

EPA remains concerned about operator compliance with annual reporting requirements. Therefore, Region 6 requests a written explanation on the enforcement actions that OCC has taken to assure operator compliance with OAC 165:20-5-7, and a list of all injection well operators that have not submitted annual reports for 1998, 1999, or 2000. The list should include the operator's name, address, phone number, serial number, legal location, lease name for each

noncompliance injection well, and the enforcement actions/dates taken by OCC. OCC should submit this information to Region 6 within 30 days after receiving this EOY evaluation.

Revocation of Injection Orders and AOR concerns—As previously mentioned, EPA applauds the State program for its efforts to increase the accuracy of OCC’s UIC well inventory and data management system. Correspondingly, OCC’s efforts to validate its UIC well inventory have resulted in the termination of authority for over 6,000 former Class II injection wells since 1999. OCC staff state that the operators-of-record for these wells are no longer in business, resulting in the State assuming the responsibility for closure. The EOY discussions between EPA and OCC staff included the responsibility of all injection well operators to properly plug orphaned injection wells within the pressure influence of their authorized injection well. This responsibility is fundamental to both EPA administered and State UIC Primacy programs, regardless of the type of injection well. Even though this issue was discussed during the EOY evaluation, EPA’s review of OCC’s draft UIC Class II program revision will include additional comment on this topic.

In past evaluations, Region 6 raised concerns with OCC’s determination of the zone of endangering influence (ZEI) during the initial permitting process. The draft program revision application includes limiting corrective action to a fixed quarter-mile from the proposed injection well. This proposed amendment opposes the use of a ZEI calculation to determine appropriate corrective action as presented in the primacy program description and does not address improperly plugged wells that may be influenced by permitted injection activities. During the FY01 EOY discussions, EPA and OCC technical staff reviewed the formula used to determine the pressure influence of a proposed injection activity. Region 6 oversight staff proposed continued dialogue between the State program and Region 6 engineers on the appropriate use of a ZEI calculation. Region 6 also proposed to explore hosting an Area of Review Summit to which all State UIC programs in Region 6 will be invited to participate. Region 6 also anticipates providing further comment of this issue as part of EPA’s evaluation of OCC’s draft program revision.

Operator Financial Assurance—Based upon the large number of recently orphaned injection wells (as mentioned previously in the well inventory discussion), the current financial assurance requirements appear inadequate to assure appropriate financial responsibility from a large percentage of Oklahoma’s Class II injection well operators. For Type A surety, non-commercial Class II injection well operators are only required to file an annual financial statement showing net worth of \$50,000 using Form 1006A [OAC 165:10-1-10(a)(1)]. When a non-commercial operator goes out of business or chooses to abandon a permitted injection well, the financial statement is virtually worthless, leaving the State program with the responsibility of plugging abandoned wells using limited state funds. Type B surety requires a more substantial “irrevocable letter of credit, cash, a cashier’s check, a certificate of deposit, bank joint custody receipt, or other approved negotiable instrument, or a blanket surety bond” for the general amount of \$25,000 [OAC 165:10-1-10(a)(2)]. Even this method may be inadequate to plug a significant number of orphaned wells.

In addition to Form 1006A, operators are also required to file Form 1006B, *Operator's Agreement to Plug Oil , Gas, and Service Wells Within the State of Oklahoma* [OAC 165:10-1-11]. The State UIC program Director may accept a single financial assurance instrument for any number of operating injection wells. During the end-of-year discussions, State program personnel could not recall any instances where OCC successfully enforced the financial assurance requirement for plugging an abandoned injection well, i.e., actual use of Type B surety.

If the State program required an irrevocable letter of credit from each operator's financial institution or required a permanent surety bond assigned to the State program, the assurance of available funds to timely and adequately plug abandoned wells by the State program would be more certain. As far back as 1995, EPA recognized the basic inadequacy of OCC's current financial assurance requirements in EPA's annual mid-year and end-of-year evaluations. Appropriate financial assurance that insures proper plugging of wells upon abandonment is a fundamental criteria in determining the effectiveness of any Class II State program [46 Fed. Reg. 27333, 27338, May 19, 1981]. Therefore, EPA strongly recommends that OCC amend its current financial assurance requirements to provide for effective plugging of the very large number of abandoned injection wells. EPA anticipates discussion of this issue with OCC UIC staff during future oversight activities and during EPA's evaluation of Oklahoma's draft UIC program revisions.

Mechanical Integrity Surveillance—All Class II injection wells are required to be tested for mechanical integrity prior to operation, and subsequently, at least every five years (OAC 165:10-5-6). On a case by case basis, a more frequent testing period may be required to assure protection of underground sources of drinking water. EPA's FY00 mid-year evaluation documents the reported mechanical integrity test (MIT) failures in three Oklahoma counties between 1997 and 2000. That analysis indicated a need for OCC to improve its compliance tracking procedures because MIT records did not show the current status of wells that had previously failed MIT. In response, OCC increased the surveillance of MITs for both commercial disposal wells and non-commercial facilities. Commercial wells are now reviewed for compliance annually with all operating requirements, including annual MIT testing. Each quarter, OCC now notifies operators of wells due for MITs the following quarter. One of the three counties reviewed by EPA in its FY00 mid-year UIC evaluation, Washington County, showed no MIT failures in 87 tests performed. This low failure rate now appears dubious based on MIT failure rates for one field in Washington County during September 2001.

Recent field activities of EPA personnel during investigations of surface contamination issues in Washington County resulted in an oversight inquiry of the Class II injection activities of Buck Creek Associates, L.L.C in Painter Field. EPA's initial concern involved observed high injection pressures as compared to the depth of injection. EPA field personnel observed injection pressures believed in excess of permit authorized limits. A cursory review of the injection parameters in OCC's UIC database showed a range between 300 psi pressure, 500 barrels per day (b/d) to 400 psi, 150 b/d at depths ranging between 1200 and 1800 feet below surface. OCC database records for the Buck Creek injection wells showed general non-compliance with MIT

testing frequency [OAC 165:10-5-6] and general compliance with annual reporting, i.e., OCC Form 1012A [OAC 165:10-5-7]. Based on the permitted and observed injection parameters, the adequacy of corrective action within the pressure influence of permitted injection wells is also a concern.

Subsequent to the August 2001 EOY discussions on this issue, OCC field and enforcement personnel inspected approximately 126 injection wells in Painter Field for mechanical integrity. Not all wells were tested because some were not being used for injection. Of the 107 wells tested for mechanical integrity, 78 failed annulus pressure tests (a 73% failure rate). OCC's compliance report for October 30, 2000, (EPA Form 7520) indicated a 12% failure rate for MITs performed between October 1, 1999 and September 30, 2000. OCC's overall reported failure rate is within the range reflected by other Class II UIC programs in Region 6, about a 10% MIT failure rate. The large percentage of failures in this instance suggests a general problem in either previous testing criteria and/or adequate frequency of MITs.

OCC staff chose to allow Buck Creek Associates to address the MIT and other operational violations without taking formal enforcement actions. OCC staff explained that this action was taken to allow the operator to address the deficiencies without excessive financial burden from UIC penalties or fines. In a September 12, 2001, letter to OCC, Dallas Operating Corporation, as managing consultants for the operator, proposed to recondition the packer, test and repair the tubing, and reevaluate the mechanical integrity of 48 wells. The operator proposes to convert remaining injection wells to oil production without corrective action. EPA will continue to evaluate OCC's MIT methods, tracking procedures, and frequency determinations.

Update of Draft Section 1425 Program Revision—As previously mentioned, Region 6 received a draft program revision from OCC in December 1998. OCC submitted the draft revision package as part of the 1998 agreement associated with EPA's comprehensive review of Oklahoma's Primacy Class II UIC program. Over the past two years, the Region and the State program have worked to fully understand several UIC implementation issues including but not limited to corrective action in the permitting process, AOR/ZEI determination, and annular injection of drilling mud. In addition, Region 6 staff discussed these issues with other regions and EPA Headquarters staff. During EOY discussions, Region 6 UIC staff committed to provide comments to the State program before the end of December 2001. However, UIC staff and Regional Council workloads and the creation of a crosswalk between OCC regulations and EPA guidance criteria have interfered with that proposed timetable. Region 6 will strive to provide comment to OCC on this part of the State UIC program during the first quarter of 2002.

Update of Draft Section 1422 Program Revision—The Region is also reviewing a draft program revision submitted jointly by both OCC and Oklahoma's Department of Environmental Quality, that part of Oklahoma's UIC program approved under SDWA Section 1422 which regulates UIC activities associated with Class I, III, IV and V injection wells. During 2000, the Oklahoma Legislature amended both the Oklahoma Brine Development Act and the Oklahoma Environmental Quality Act through SB 1223 to resolve apparent discrepancies between State and

Federal UIC jurisdiction over certain Class V activities. OCC is requesting UIC Primacy authority for activities involving re-injection of brine subsequent to halogen removal and certain types of aquifer remediation activities associated with leaking petroleum storage tanks. At EPA's request, both Agencies submitted associated crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Again, the Region anticipated providing comments to both State agencies before the end of calendar year 2001, but now anticipates providing such comment during the first quarter of 2002.

APPENDIX

Oklahoma Corporation Commission Underground Injection Control Year End Narrative FY 2001

The thrust of the activities in 2001 was on improving compliance rating of the program. To achieve the objective the quality of the data had to be improved in order to be certain that the readings were true. Yet the quality of the information would have been the result of having high degree of compliance from the operators. Each task dependent on the other for its success, one could not be accomplished without the other: a double pillar task.

To accomplish the task a four-phase program was devised comprising of: Data Quality Improvement, Permit Vacation, Well Identification, and Plugging.

FY2001 was devoted primarily to phase I, and although there always will be room for improving the quality of any data, this phase of the program as a main thrust activity, has been completed and now is on the "keep" mode. The primary objective of Phase I was to identify the Orders that were causing the low Compliance ratings, define the cause, and address the issues by Notifying the operators, updating the database, and taking the necessary steps to rectify the problem. In implementing Phase I, in excess of 7,100 Compliance Reviews were conducted, approximately 4,000 Orders were identified as inactive and designated as targets for Vacation in the course of implementing Phase II.

Phase I, in addition to accomplishing its primary objectives, achieved two secondary goals by creating two by-products to address some needs, which had risen during the implementation process. From the outset of this Phase, it was felt that an in-house "Enforcement Screen" was needed for the ease of tracking the Enforcement cases. An Access based data storage and retrieving program was created for this purpose and became functional by the beginning of the second quarter. There also appeared to be a need for a data management system to store the information related to UIC wells with Continuous Monitoring Systems, to establish a program tracking process for the monitoring and testing of such installations. Currently, as the relevant information is being collected, an Access based screen is being created to fulfill this need, as well.

By fourth quarter of the Fiscal Year, Phase II of the program was initiated and is presently in progress. Of the targets identified in Phase I, 720 Orders in 15 Counties had been vacated by the end of June, all of which are located in District I, in the Northeastern quadrant of the state, where most of such cases reside.

On a different front, in the last Fiscal Year the Notification of operators, whose UIC wells was due for Mechanical Integrity Testing, was modified by switching from an annual to a quarterly notification process. The higher frequency notifications with shorter time span will optimize the process' efficiency for all parties involved.

Exceptional emphasis was placed on monitoring of the Commercial Disposal Facilities in FY 2001. The entire inventory of over 200 Commercial Disposal Facilities had gone through comprehensive Compliance Review in the Fourth quarter, and by the end of the period, 100% of the inventory was in compliance or were in the process of implementing the program's requirements to be in compliance.

As progress was being made in improving the quality of the data, an assessment process was also initiated in evaluating the capabilities and short comings of the UIC's current Information Management System versus those of other systems, particularly the Risk Based Data Management System (RBDMS) and its adaptability to the UIC's present database. It is felt that it is most probable that employing the RBDMS will greatly enhances the capabilities of the UIC's Information Management System, removes the need for additional "screens" for Enforcement, and greatly improves communication with Field Inspectors. The Commission's Data Processing and Oil and Gas Conservation Divisions are conducting this evaluation.

In conclusion, FY 2001 was marked with more "gains" than "losses", "cleaner" rather than "dirtier" database, and "more" in Compliance verses "less".



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

AUG 18 2005

FY04

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2004 (FY04). On September 14, 2004, Ms. Nancy Dorsey visited Oklahoma Corporation Commission (OCC) offices and took part in discussions with you, Mr. Tim Baker, and Mr. Rod Davari about current UIC program implementation issues. Mr. Michael Vaughan of our Grants Section joined in by telephone and e-mails on March 10, 2005, we invited Mr. Baker's comments on the draft evaluation. This report considers OCC's comments received by mail on May 17, 2005. The FY04 evaluation is subdivided into sections:

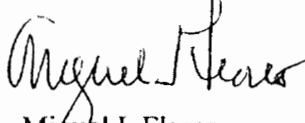
- I. Introduction
- II. Grant Work plan
- III. Program Revisions
- IV. UIC Oversight Issues

OCC's Annual UIC Narrative for FY04, (see Appendix B), lists the primary objectives of the UIC program during FY04. The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed requirements, though according to 7520's this year, all of the tests failed. These reports are important measures of OCC's compliance with UIC Safe Drinking Water Act standards, yet there were significant delays in reporting the cumulative final 7520 reports, annual UIC narrative report, and well inventory count. OCC's annual 'narrative' report is part of the Grant's Workplan commitments. It was due August 15, 2004, but was received on February 3, 2005, almost six months late. EPA acknowledges that staffing changes contributed to this extreme delay.

In regard to OCC's draft revisions for both Class II and Class V injection activities, we await OCC's and ODEQ's responses. Our letter of April 8, 2004, requests response to specific questions about OCC's 1998 draft Class II program revision. Our letter of March 20, 2005, to both ODEQ and OCC, requests a joint re-submission of the draft revision package for Oklahoma's UIC program authorized under SDWA Section 1422. Until EPA approves such revision, SDWA authority for all Class V injection in Oklahoma remains with ODEQ. We are confident that together we will address all significant UIC issues through the program revision process. The last extension deadline requested by OCC has again gone by with no response received. We request that OCC set realistic response dates and give the issue sufficient time to meet these established deadlines.

Our common efforts must assure adequate protection from UIC activities for underground sources of drinking water as mandated by SDWA. This End of Year has raised a number of issues, including those discussed in our September meeting (Appendix D). OCC's response, based on an earlier draft of this document, is included as Appendix E. This revised document incorporates changes based on the information supplied with the OCC response of May 17, 2005. If you have any questions on UIC program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Nancy Dorsey at (214) 665-2294, if they have UIC oversight questions, or Michael Vaughan at (214) 665-7313 about any grant related matters.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Miguel I. Flores". The signature is fluid and cursive, with the first name "Miguel" being more prominent.

Miguel I. Flores
Director

Water Quality Protection Division

Enclosure

cc: Tim Baker, OCC Pollution Abatement Manager & Acting OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2004 (FY04)
July 1, 2003 through June 30, 2004**

I. Introduction

The Oklahoma Corporation Commission (OCC) is the lead agency for the State's UIC Class II wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities between July 1, 2003 and June 30, 2004.

On September 14, 2004, EPA Region 6 representatives met with OCC management and staff for EOY evaluation discussions (see Appendix A for attendees). This report is subdivided into Grant Work Plan, Program Revisions and Oversight Issues. Appendix B contains OCC's annual narrative required in the FY04 UIC grant workplan. Appendix C contains OCC's December 21, 2004, responses to questions posed in EPA's 2003 end-of-year evaluation. Appendix D contains information gathered during EPA's review of well files during this annual evaluation. Appendix E contains OCC's May 17, 2005 response to a previous draft of this document.

II. Grant Work Plan

A. FY2004 Grant

The approved Federal FY04 allotment for the State of Oklahoma's UIC program administered by the OCC was \$308,600, and this amount was awarded to OCC in FY2004. OCC submitted an application for \$1,047,200 of federal funds.

Workplan Deliverables—Table 1 identifies State program updates and other deliverables required during FY04. OCC was significantly delinquent on three deliverables, the cumulative final 7520 reports due October 30, 2004, the annual UIC narrative report due August 15, 2004, and submission of the 2005 well inventory values for grant calculation due by January 7, 2005.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	1/31/04	2/2/04
	4/30/04	5/14/04 e-mail
	7/30/04	11/17/04 incorrect filing; revised 1/31/05 still incorrect
	10/30/04	2/1/05 incorrect filing
Grant Workplan/Application: FY04	5/01/03	5/03/03
Annual UIC Narrative Report	8/15/04	Feb. 3, 2005 w/o complete statistics
Final Financial Status	9/30/04	6/16/04
UIC Well Inventory	7/01/04 *	1/07/05

* In order to streamline requests for information from OCC, the date for the well

inventory was set last year to match the start of the budget term/state fiscal year.

The 7520 filing problems were discussed with OCC; the SNC exception list was not the official form and the time period was half that required on two of the 4th quarter forms. Corrected copies have not been received.

B. Form 7520 Permits and Annual Reporting by Well Operators

OCC enforcement efforts on operator compliance with the reporting requirements of OAC 165:20-5-7 appear to be working based on submission of Form 1012 (annual operator report of volume and pressures) versus corrected well inventory, as shown in Table 2. Corrections include removing new permits and well transfers from the active well inventory totals; OAC 165:20-5-7 does not require operators of newly permitted wells or operators of wells recently transferred to file Form 1012 for the time period prior to their new authorization. **OCC is commended for their efforts in resolving this issue and in the continued improvement of operator's annual reporting responses.**

Table 2. Permit Reporting*

	Year covered	1998	1999	2000	2001	2002	2003
F1012 Annual Injection Reports	4/1-3/31	8,093	9,118	8,935	9,143	9,450	9,017
Well Inventory	Variable start	15,995	15,610	11,448	11,330	10,500	10,254
7520 new permits	10/1- 9/30	384	457	199	302	209	449
Inventory minus new permits	Variable start	15,611	15,153	11,249	11,028	10,291	9,805
Annual Inj. Reports / (Inv.-new permits)		52%	60%	79%	83%	92%	92%

*Annual reporting is not required for wells newly permitted or with reported ownership transfers in the reporting year.

C. Significant Non-Compliance (SNC) and Exception Reporting

OCC's relatively new practice of reporting "Significant Non-Compliance Wells" with the quarterly exception reports provides a more meaningful response than the exceptions list alone. During FY04, EPA identified one case that raised concern with the 7520 reporting of "Exceptions". The case of unauthorized injection into the K&E Brown #1, discussed in detail in EPA's FY03 EOY, should have been reported as an "Exception" because OCC did not take enforcement action on this well operator for more than three months after discovery of the problem.

EPA is concerned about the delays between discovery and contempt filing, and between well plugging and contempt filing. Due to the extended period of time before compliance, this case should have been reported as an exception on the 7520 quarterly report. The fact that OCC ordered no penalty prior to EPA's involvement is also a concern.

III. Program Revisions

A. Update of Draft Section 1425 Program Revision

Since OCC's submission of a draft Class II UIC program revision package in December 1998, many issues first identified during the region's program review dated December 15, 1997, remain unresolved. The Region continues to seek interpretation and guidance on several permitting issues, including area of review requirements. Correspondingly, Region 6 responded to OCC's 1998 draft Class II UIC program revision package on April 8, 2004, with a request for additional information on water quality protection standards, area of review effectiveness criteria, financial assurance, and corrective action authorities. While preparing a response to our request for additional information, OCC requested several extensions including the latest in their December 21, 2004, response to EPA's FY03 end-of-year evaluation. In that letter, Mr. Tim Baker anticipated sending a response by mid-January 2005. EPA believes this revision is a priority and will closely monitor its progress. On February 24, 2005 the missing information was discussed with Mr. Baker. Via e-mail on April 14, 2005, the end of June 2005 was offered as a qualified answer date.

Resolution of this long standing issue is important. OCC suffered substantial reduction in staff in FY04, and maintains this has largely caused delays in submitting the response. EPA requests OCC to complete the response as soon as possible.

B. Update of Draft Section 1422 Program Revision

In a draft joint program submission with ODEQ dated June 30, 2000, OCC seeks UIC Primacy authority for certain Class V activities: reinjection of brine into the same formation following halogen removal and aquifer remediation wells associated with leaking petroleum storage tanks. In 2002, at EPA's request, both Agencies submitted regulatory crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 sent comments to both agencies on May 28, 2002, and as of this report, EPA continues to await resubmission from Oklahoma's UIC Primacy agencies of an amended revision package for Safe Drinking Water Act (SDWA) Section 1422 authority. Currently SDWA authorization of all Class V UIC activities lies with ODEQ, not OCC, until EPA approves a complete revision pursuant to 40 CFR part 145. EPA has renewed requests on several occasions for the amendments to be submitted. In the attachment to the December 21, 2004 letter from Mr. Tim Baker, he anticipated sending a response by April 1, 2005. In the attached comments on the Draft of this document, OCC says the response will be submitted by the end of June, 2005. OCC should coordinate with ODEQ to assure all aspects of the Class V program are addressed when a final Class V revision package is submitted.

IV. UIC Oversight Issues

OCC headquarters is commended for enforcement staff's responsiveness to EPA informal requests for information and action on wells with enforcement issues, a responsiveness EPA has not seen from District offices.

A. Mechanical Integrity Testing

OCC regulations require that every Class II injection well pass a mechanical integrity test prior to initial operation, and subsequently, at least once every five years (OAC 165:10-5-6). The UIC Director may require more frequent testing to assure protection of underground sources of drinking water (USDW) on an individual case basis.

Figure 1 shows the cumulative number of 5-year MITs performed on Class II wells in Oklahoma since 1993. The cumulative number includes all MITs, even the retesting following failure and retesting before transferring well ownership. Based on the current 5-year cumulative MIT value and a more accurate well inventory, Oklahoma's Class II UIC operators generally comply with the MIT requirements of OAC 165:10-5-6.

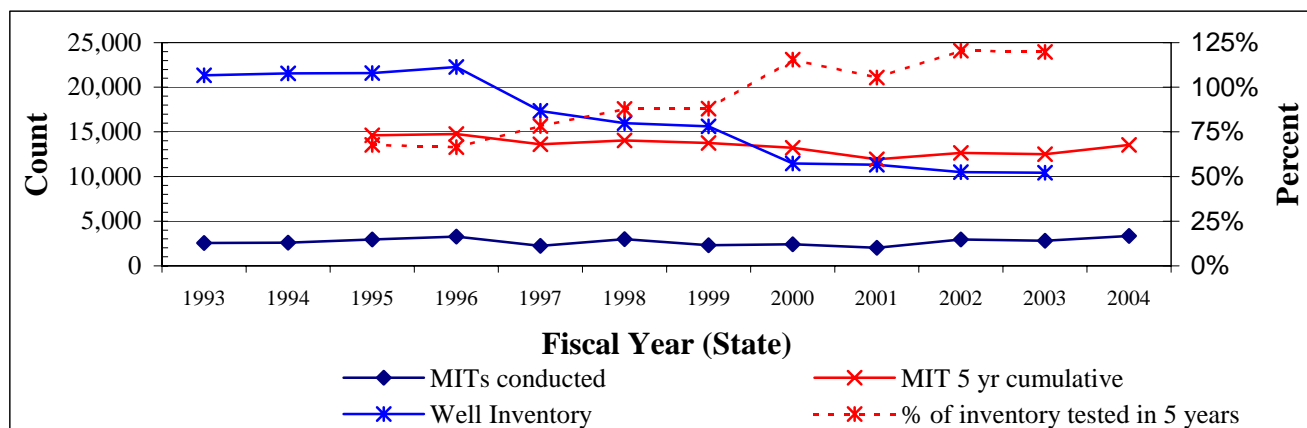


Figure 1. Mechanical Integrity & Well Inventory

Table 3 shows the MIT failures and violations reported in EPA Forms 7520-3 Inspection Reporting and 7520-2B Violation Reporting for MIT failures. The 7520's actually list 100% failure, though the OCC narrative year end report says 5%. (See Appendix B) The reduction in the wells taking longer than 90 days to be returned to compliance is also quite good, down from 164 in 2003 to 18 in 2004.

Table 3. 7520 MIT Violations and Failures

	1997	1998	1999	2000	2001	2002	2003	2004
MIT's Conducted	3148	2667	2246	2415	2759	3068	2779	3324
MIT's Witnessed	3140	2667	2226	2415	2759	3068	2779	3324
Violations: Mechanical Integrity	93	103	215	179	192	2195	3558	311
MIT: Significant Leak: Failed	141	140	159	153	242	128	135	3324
% MIT Failure (Sign. Leak / MITs)	4.5%	5.2%	7.1%	6.3%	8.8%	4.2%	4.9%	100.0%*
MIT Violations / MIT Failures	0.7	0.7	1.4	1.2	0.8	17.1	26.4	0.1
Remedial Action: total	0	272	318	306	482	387	270	179
MIT violations not returned in 90 days	3	5	9	10	13	131	164	18

* Based on numbers filed in OCC's attested annual 7520 report.

Table 4 shows the number of reported cases of unauthorized injection for both saltwater disposal (SWD) and enhanced recovery (ER) wells. The reported values for 2004 indicate a significant increase in the number of unauthorized ER injection wells from 2003 and 2002. The increase may stem from an increase in surveillance by OCC's inspectors during 2004. (The 2004 numbers were recalculated by EPA from the mid-year and final 7520's information, because the information in the final report was for the incorrect time frame.)

Table 4. Unauthorized Injection

	1997	1998	1999	2000	2001	2002	2003	2004
SWD: Violations: Unauthorized Injection	5	8	13	9	7	5	3	3
ER: Violations: Unauthorized Injection	13	24	36	22	17	0	6	19
Total	18	32	49	31	24	5	9	22

B. Permit Review

EPA conducted a file review of 30 of the 348 OCC permit orders dated between August 13, 2003, and March 23, 2004. Appendix D lists the specific issues found, which were discussed previously with OCC. Table 5 shows permit types reviewed. Exhibits for two key permitting issues, Area of Review (AOR), and Zone of Endangering Influence (ZEI), were verified to be in the files.

Table 5. OCC Permit Review Issues According to Well Permit Classification

	Non-commercial	Commercial	Enhanced Oil Recovery	Emergency	Exception	Percent Meeting Requirements
Total Well Permits	12	1	9	2	6	100%*

* After files located: some not yet filed at time of visit, 1 misfiled, others filed with an earlier Order.

1. AOR Calculation

Per OCC Regulation 165:10-5-5 (b)(2), a place on the OCC permit application form is used to collect the “available” basic information necessary to calculate a zone of endangering influence (ZEI). For the wells in Table 6, operators provided the basic information approximately half the time. OCC’s stated practice is to request the information only when there is a problem well within the ¼ mile review area required in OAC 165:5. As also indicated in Table 6, OCC ZEI calculations indicated a pressure radius greater than ¼ mile roughly a third of the time.

Table 6. AOR Review Information

	Wells	
ZEI Calculation	16	
greater than 1/4 mile pressure radius	5	31%
Total wells	30	
Pressure or Fluid Level reported	15	50%
Porosity reported	16	53%
Permeability Reported	14	47%

Only two of the five permit applications with a high calculated ZEI radius reported injection formation pressure information. The remaining three applications were assigned pressures by OCC. EPA recommends in the future that OCC require in all cases the submittal of current pressure information and basic reservoir parameters necessary to adequately calculate a ZEI.

One order authorized a non-commercial disposal well to inject up to 40,000 barrels of water per day (BWPD) and 1,000 pounds per square inch (psi) of injection pressure without submission of any initial formation pressure data. OCC assumed a value for this. EPA believes initial pressure is essential for consideration of any Class II injection well permit. The permit file contained a map clearly showing a second injector

psi) in the same horizon within overlapping ¼ mile radii. A third injector less than a mile away was also shown on the AOR map. Neither of these two injectors was considered in the permit evaluation. Moreover, the operator's map showed a dry hole reaching the injection zone within the AOR, while the OCC map located the dry hole just outside the ¼ mile AOR. EPA is concerned that operators are not supplying and OCC is not requiring information vital to an adequate determination that injection wells will not contaminate underground sources of drinking water. In this case, the applicant requested and OCC granted a hefty pressure in an injection zone with apparent pressure influence from other injection wells.

2. Area of Review Map Sources

In OCC's response to last year's EOY questions, the OGCD Well Records were cited as the official source of information for permit reviews. If this refers to the OCC on-line data available to the public, EPA is concerned that this database is incomplete since many of the old paper records have not yet been entered. In another case, OCC staff preferred Oil-Law Records over OCC records because the on-line well information is more complete. (See the first two paragraphs of the attached OCC comments under III. B. (2) for OCC's description of the procedure for well information.)

Since well records of historic oil fields are many times difficult to locate, creating and maintaining accurate base maps is difficult and time consuming. Manpower limitations, historically poor operator reporting, and missing records further compound this problem. OCC maintains records in many different files and buildings, which also makes reviewing well specific information very difficult. Also of concern, one of the databases used by OCC, Oil-Law Records, is a subscription service for which OCC indirectly provides much of the information.

3. Potential Enforcement Issues

The file review produced a number of potential enforcement issues including unauthorized injection either without orders or with time gaps between emergency or terminated orders and the effective date of new orders (See Appendix D, D. Order Issues). EPA is concerned that the OCC reviewers did not catch these problems.

C. Field Inspection

As part of the annual review, EPA visited five commercial wells on June 10th, 2004, as suggested by District II staff based on access and proximity to the district office in Kingfisher. The original randomly selected wells from a file review were not visited because of inaccessibility due to rainy weather. Very few problems were noted at the commercial sites, although one well exhibited a static pressure above the maximum allowable injection pressure. OCC has yet to provide requested feedback on the resolution of this issue.

EPA and a District I inspector made unannounced site visits to several Washington County wells with terminated authorization resulting from annual reporting noncompliance. Flow lines were connected and open to one of these wells, the Rodgers West 1, though the tank line was closed. Even though the well was previously red-tagged by the inspector, the red tag was later removed by OCC on the operator's explanation that the flow was going to the Brown #1 several miles away, not the Rodgers West 1 a couple hundred feet away. EPA would like confirmation that an OCC inspector has validated whether the Rodgers West 1 operates when the injection pumps are running. EPA is also concerned that this flow line configuration invites illegal injection, and could easily be remedied.

D. Complaint Investigations/Inspections

The number of complaint investigations and inspections is unknown as shown in Table 7. OCC's annual narrative for 2004 discusses 11,871 "routine inspections", but nothing about complaint responses. This information is normally supplied in OCC's annual report to EPA. However, this information was not included in this year's report. (Appendix B). EPA requested the information on February 3rd. The information was still unavailable as of July 5.

Table 7. Complaint Investigation/Inspection

	1997	1998	1999	2000	2001	2002	2003	2004
Investigations	352	322	325	165	150	678	1372	0
Inspections	106	108	107	140	150	534	1372	0

E. Specific Complaint Issues

Additional problems with an Oolagah area injection well and facility on the Lewis property were reported to OCC District I and Oklahoma City the day after the site visit. A visit to the facility on September 16 coincided with a visit by EPA staff to the EPA SPCC well closure program at Lake Oolagah near Alluwe. Discussions portrayed the permitted injector on the current SPCC closure list—pending review for a responsible party. SPCC had not previously provided District I with their closure list. EPA received no follow-up response of the identified problems from District I personnel.

Last year, EPA reported to OCC a complaint of high surface water salinity in and around Black Bear Creek in the old Garber Field area. EPA is concerned an active injection well may be contributing to this problem, because improperly abandoned well bores are numerous and injection wells are currently active in the area. OCC should perform an assessment of injection pressures in the area, to determine if the potential for flow to the USDW or surface exists. Exemplary cooperation from OCC helped form a task group with OCC UIC and Pollution Abatement, EPA and USGS to identify past and/or any current sources and locate potential funding sources for these efforts.

In EPA's FY03 EOY, concerns were raised over the issue of abandoned/orphaned wells in the State. EPA remains concerned about this issue and plans to address it through the program revision process discussed in this report.

APPENDIX A
STATE/EPA Staff in Attendance
September 14, 2004
FY 2004 EOY Discussion

NAME	AGENCY	PHONE
Mr. Rod Davari	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Lori Wrotenbery	Oklahoma Corporation Commission	(405) 522-2763
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Mike Vaughan	Environmental Protection Agency	(214) 665-7313

APPENDIX B
Oklahoma Corporation Commission
Class II Well Program
End of Year Narrative FY04

The Oklahoma Corporation Commission, Oil and Gas Division continues to strive to increase the availability of Commission databases to the public. The Commission believes that awareness of rule requirements and permit conditions will assist the regulated community in compliance activities. This year, the Commission was able to make available all UIC orders on the website. All existing and new UIC orders are scanned and are now available on the Commission's website. Another project initiated in 2004 will allow operators to file certain OGCD reports electronically; one report included in this project will be the annual UIC fluid injection report form 1012. If funding allows, this project is projected to be on line in mid 2005. The Commission has given a high priority to updating the OGCD's electronic data management program and is looking at several options at this time. When this project is complete it will greatly enhance the data available to the public and improve the quality of data management in the UIC department.

The UIC program continues to experience higher permitting activities as seen in prior years. This year the UIC Department approved 286 disposal wells and 238 enhance recovery wells. The increase in recent years is obviously a reflection of the price of oil which has remained healthy in the past three years. The OGCD maintains witnessing mechanical integrity tests a high priority, once again witnessing 100% of the 1,117 disposal wells and 2,207 enhance recovery wells tested this year. Another interesting statistic is the failure rate of the mechanical integrity tests has reached an all time low of 5%. This is believed in part due to the OGCD's policy of witnessing a high percentage of the mechanical integrity tests while in addition newer wells being converted to UIC wells as the number of rule authorized or wells authorized prior to primacy continue to decline. In addition to the MITs that were witnessed by field inspectors, the OGCD conducted 11,871 routine inspections on Class II wells. This is a reflection of the OGCD's policy of maintaining UIC inspections as a high priority with the agency.

Although the OGCD did see a dramatic budget decrease in state fiscal year 04 which manifested into a reduction in force. The OGCD was able to maintain or exceed UIC work plan commitments. The OGCD was allocated a budget increase in state fiscal 05 which allowed the agency to fill some vacant field personnel positions. The OGCD will continue to look for ways to cut costs while maintaining a quality program, such as modernizing information technology. However, funding revenues continue to be the major stumbling block in making long range planning a realistic goal.

APPENDIX C
OCC Response to EPA EOY 2003 Questions

BOB ANTHONY
Commissioner

JEFF CLOUD
Commissioner

DENISE A. BODE
Commissioner

OKLAHOMA

CORPORATION COMMISSION

P.O. BOX 52000

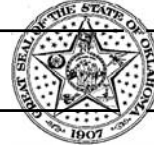
OKLAHOMA CITY, OKLAHOMA 73152-2000

255 Jim Thorpe Building

Telephone: (405) 521-2302

FAX: (405) 522-0757

OIL & GAS CONSERVATION DIVISION



Mike Battles, Director

December 21, 2004

Mr. Miguel Flores
Director
Water Quality Protection Division
Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Oklahoma Class II
Program End of Year
Review - 2003

Dear Mr. Flores:

Please find attached our response to Region Six's Review of the Oklahoma Work-plan 2003 for Class II wells. Pursuant to your staff's visit of September 4, 2003, we received your evaluation on June 10, 2004. For the ease of reference, our Response is structured in the same manner as your Review, and is divided into three sections:

1. Introduction
2. Program Revisions
3. UIC Oversight Issues

We thank you for your kind remarks regarding our Primacy Program's achievements of Work-plan 2003, and hope to build on this platform to enhance cooperation between our agencies.

We view the "Area Of Review" summit of April 2003, as a successful event in expanding the dialogue among the stakeholders, and in this regard extend our appreciation to Region VI for your

participation and hospitality.

As the third largest inventory of Class II wells in the nation, we are committed to improving our electronic data management systems. We thank you for your acknowledgement of our commitments and our achievements in this area. As we seek innovative means to fund the necessary improvements to our data management system, we extend an invitation to Region VI to explore new processes in assisting us to prevail over funding obstacles that has limited us in the past. Currently, Federal assistance accounts for less than 25% of our Class II Primacy Program.

In light of dynamics of the budget and related personnel matters of last State Fiscal Year, we have not been able to fulfill our commitments regarding the Program Revision request for Class II wells. We are hopeful to have comments in by mid January. We believe that completion of this tasks would enable us to construct Oklahoma's Strategic Plan for Class II wells, in concert with the National UIC Strategic Plan.

We are looking forward to working with you in building of the most admired Primacy Programs for Class II wells in the nation.

Sincerely,

Tim Baker
Manager Pollution Abatement

**Oklahoma Corporation Commission
Oil and Gas Conservation Division
Response to EPA Region x
End-Of-Year Review
Underground Injection Control Primacy Program
State Fiscal Year 2003**

I. Introduction

Oklahoma Corporation Commission has jurisdiction for implementing UIC Primacy Program for Class II Injection and Disposal wells in Oklahoma.

EPA's Annual Review of the 2003 Workplan was received by OCC on June 10, 2004, following a visit on September 4, 2003, by representative from EPA Region 6.

This response is prepared mirroring the format of the End-Of-Year Review, responding to the topics, which warrant reply, whether due to requests from the review or deemed necessary by UIC.

II. Program Revision

A. Update of Draft Section 1425 Program Revision

Due to extraordinary circumstances pertaining to changes in management, Oil and Gas Conservation Division (OGCD) of the Oklahoma Corporation Commission requested for an extended time to be able to respond to the draft Program Revision package that was submitted to OCC on April 8, 2004. OGCD will submit its response to the Program Revision package by mid January 2005.

B. Update of Draft Section 1422 Program Revision

OGCD will submit its response to EPA's comments to Draft of May 28, 2002, on April 1, 2005.

III. UIC Oversight Issues

A. Mechanical Integrity Testing

The review requests clarification on the substantial increases in the number of violations pertaining to the MITs for the fiscal years of 2002 and 2003, as compared to the fiscal years of 1997 through 2001. The number of violations for the Workplans 2002 and 2003 are inclusive of those Class II wells whose MITs were past their testing cycle's due date. The methodology and timing of assembling the numbers for the prior years are not clear due to personnel changes, however it appears that it probably did not include the wells whose MIT were past their five-year cycle due date.

The review inquires about Brown No. 1, an unauthorized disposal well. An Enforcement action was filed by UIC on March 7, 2004 and a Final Order was issued on June 24, 2004 through the Hearing process. The Operator, K & E Services was fined and the well was plugged.

B. Area Of Review (AOR)

OCC has expressed its opinion on issues related to AOR on several occasions, and has maintained the position that these issues are not relevant to the End-Of-Year Review of the Annual Workplans.

C. New Permit Review

Table 3 of the review depicts the statistics pertaining to the applications that were randomly selected for review by the EPA and displays percentile ratings of what the reviewer terms as deficiencies of the supporting documents. As a matter of procedural policy, when processing a new application for all categories, the UIC Department conducts technical and clerical reviews, and AOR calculations as an analytical tool for corrective measures. The filing procedure for all of the UIC applications requires that the application forms and the supporting documents be submitted to the UIC Department. The application form and the supporting documents are maintained in the UIC Department working file, while a copy of the Application is placed in the files of the Secretary of the Commission located in the Court Clerk's Office. Upon completion of the review process the accumulated supporting documents are transferred as an exhibit package and filed with a copy of the Order in the Court Clerk's Office. Table 3 is a snap shot of an on-going process and should not be viewed as a handicapped procedure in document handling and filing in the permitting segment of the program. The filing of the exhibit packages in the Court Clerk's Office however, has been modified to that of a weekly cycle to provide for more uniform transformation of the data from UIC files to those of the Court Clerk's office.

a) AOR Calculation

The cited paragraph, 165:105-5 (b) (2) in the Review, states that "...[Commission] may request the applicant to submit the following information as a prerequisite to approval of the application: (2) a list of the following information, if available to the applicant..." (Underlines represent UIC's emphasis). OCC utilizes the AOR calculations as corrective measure in addressing the problem wells within the ¼ mile radius of the well; it is therefore logical that it would be utilized only when there is a need for corrective action in the presence of Problem Wells.

b) Basic Data

The 0.38 PSI / Ft. gradient is a conservative engineering assumption that in fact, although "inaccurate", reduces the potential risk of migration out side the confines of the injection / disposal zone since it results in a lower permitted operating pressure in comparison to that of the actual reservoir data. The units assigned to the pressure and permeability are always in pounds/square inch and milidarcy, respectively, according to OCC Rules cited above, unless stated otherwise.

c) Area of Review Maps

The critique that "...half of the maps used by OCC contain fewer wells than those supplied by the operator with the Application", in itself is not enlightening. Larger number of wells on one map versus another could simply be the result of redundancy in the number of data entry for the same well into the database from which the map is constructed. In fact this is a common problem with the two most commonly used commercial cites. In addition, if there are wells within the AOR that do not penetrate the target zone they often times will not be plotted on the staff's work map. OGCD's Well Records is the official data base for comparison purposes, and that data base is constantly being updated by OGCD's staff as the result of the information furnished to them from various sources including UIC's exchange of information with the industry as well as Field Operations' discoveries in the field.

2. Protective Measures

OCC concurs with EPA that using legal description on the water analysis reports would improve the quality control Page 13 of 27of the reports. UIC will encourage this

procedure in its data submittal policies.

D. Field Inspection

OCC has taken EPA's request under advisement. Collecting the field data and performing analysis to determine the causes of the break out however, requires resources beyond what has traditionally been available to the UIC Program and would require special funding for implementation.

E. Complaint Investigations/Inspections

The review inquires about the possible causes for the increase in the number of Investigations / Inspection of UIC Facilities as compared to previous years. It is presumed that the primary reason is utilization of better accounting tools, i.e. issuance of Inspection Reports.

F. Specific Complaint Issues

Gilcrease 1-A (PD 200100157T) has been plugged, the complaint related to UIC issues has been addressed, and the case was closed.

G. Annual UIC Inventory Accuracy

In the last couple of years UIC has been improving the accuracy of its database. These efforts continue to be an integral part of UIC's Monitoring activities. These efforts were hampered drastically in FY2004 due to force reduction measures implemented throughout the Agency. The efforts relevant to identification and location of former UIC wells with "orphaned" status have not been funded and therefore have been inactive. Due to abrupt nature of work stoppage, the project was not suspended adequately and accumulated information is not in a ready-to-use status. The data is available and could be formatted to be utilized once funding becomes available.

H. Annual Reporting By Well Operators

Throughout the 2004 calendar year (UIC Annual Reports are on calendar year), UIC has been implementing Informing-Enforcing strategy, utilizing the conventional methods of communication with operators as well as seeking OGCD's field inspectors' cooperation as the outreach communicators with their industry counterparts to improve operators' knowledge about their regulatory obligations. The program has been successful, although it is yet to reach a compliance rating satisfactory to UIC department. The UIC Dept. will continue to pursue these efforts.

APPENDIX D

File Review Issues

A. File Contents

PD200300247 The file is missing the Emergency Order and all technical data, such as why the requested pressure was reduced, the completion report, etc. (There were 9 wells actually being handled—do any of them have all the information? PD200300247-200300255) The unitization was approved 3/23/01, for section 13 (not 23) according to the on-line Case information. Please verify where the Order specified. When did the wells actual start injecting? Many of them were logged between 8/9/02 and 10/22/02. How much was the company fined for failure to comply with OCC injection regulations? Did the company actually cease injection between discovery and approval of the Emergency Order on 7/1/03?

PD200300377 The file is missing everything except the application and authorizing Order. No exceptions were listed, yet the surface casing ends at 46', with base treatable water at 110'.

PD200300263 The file is missing everything except the application and authorizing Order.

PD200300421 Where is the original application? The copy in the file says amended.

PD200300370 Transfer of well from Kerr McGee to Anadarko missing from file—despite request.

PD200300054 Was this injection application ever granted? I pulled the exception, not the original file.

ME- what is Relief per 165:5-7-30? PD200300210 MIT relief request—backup support for relief?

PD200300317 The file is missing everything except the application, authorizing Order and one publication notice.

PD200300268T The file is missing everything except the application, authorizing Order and one publication notice.

PD200300172 Missing second publication notice.

PD200300412 This file is incomplete—or only for the casing Exception Order. Please confirm the current status of the Order amendments? And the results of the technical review, if one was done.

B. Pressure Issues

PD200300297 Exception granted to test at a minimum pressure of 300, down from 1000 required. EOR permit allows injection up to 1265. There was nothing in the file to indicate that this is a technically reasonable—especially as the application states there should be no problem safely testing at 1000 psi.

PD200300317 No surface casing is listed for the well. The well was granted staggered pressures from 336 psi at 436-506', up to 600 psi at 1064 – 1154'. There is no exception for the casing and no indication of any technical evaluation.

Table 8: Annual RAT or MIT Requirements

OCC Order	Well	Max Inj Pr (psi)	Top Inj (ft)	Comments
PD200300459 486825	Webb 8	425	860	Exception: only 130' cmt above pfs; Do not have inj Order; no info on reservoir Pressure or Fm data
PD200300388 485346 new 449187 initial	East Velma Middle Bloc SU Unit 158	3000	6524	Increase Pr by 1000 psi; top inj by 73', but thickness by 30' +/- . Original Order exception for max P test of 500 psi. Could not maintain 1000 psi for 30 min. Initial Order no annual RAT req.
PD200300272	Rose 6	1,800	1200	Annual MIT

Table 9: High approved surface pressures

OCC Order	Well	Surf Pressure (psi)	Top Injection (ft)	Psi/ft	Comments
PD200300263 480916	Jay Paul 2	500	1135	0.44	Only application and Order in file
PD200300317 480542	Loco Unit 8-3124	600	436	1.38	Only application and Order in file; Inj. Pressure varies with depth
PD200300342 485223	Dotter 1	1300	2754	0.47	Converted non-commercial well to commercial
PD200300386 482687	EVWBSSU 201	2400	4938	0.49	
PD200300388 Original 449187 New 485346	East Velma Middle Bloc Sand Unit 158; EVMBSSU 158	3000	6524	0.46	Inc. max surf Pressure, though MIT test couldn't maintain above 750.

PD200300428 486226	Beck 1	1090	2180	0.50	Surface csg. set 139' above BTW.
PD 200300459 486825	Webb 8			0.49	Exception order; annual RAT required

C. AOR Issues

PD200300135 The OCC AOR map excludes one well, but more critical are the other permitted injectors at within a half mile and a mile respectively. The first with overlapping AOR, is also for 40,000 BPD with 1000 psi, while the latter is for 30,000 BPD and 400 psi. Undoubtedly the 1000 psi is necessary owing to higher fluid levels. Please check either fluid levels in accessible surrounding Wilcox/Arbuckle wells or either the static pressure or fluid level in the injectors: Black 1A and Goodnight 2 & 3.

D. Order Issues

Order 486226 granted Pontotoc Production an EOR permit for Beck 1. A disposal permit was requested. Listed depth of surface casing is 71', with base treatable water at 210'—no CBL or other requirements—surface csg depth on Suchard's Radius of Endangering Calculation changed from 71' to 1230', without explanation in file.

PD200300168 has only one Emergency Order in the file that expired 7/5/03, while the final disposal order was granted on 11/19/03. What are the intervening Emergency Orders or was the well shut in?

PD200300207T The final Order 482970 states "... this Order shall terminate if the intercept wells, #1, #2 and # 5, cease to produce." Belport Oil, Inc. wrote to OCC, about "four open wellbores (wells #5, #6, #2, and #1 ... within a ¼ mile radius ...cased from TD to surface with 4.5" casing and generally were tagged with enough cement to cover the Bartlesville Sand, We propose initially to monitor the fluid levels in the above mentioned wellbores using monthly echometer shots. ..." Why was the nature of the wells and the monitoring misstated in the Order? Has Belport in fact run echometer shots on any of these wells? What were the results?

PD200300342 This well was previously given a disposal permit in 1988 good for seven years, Order 324742 PD19534. Was there a reapplication in 1995 or was the well shut-in between 1995 and the new commercial Order approval?

E. Enforcement Questions

PD200200015T New application injection 1/11/02 after discovery (?) (by inspector or HQ?) of injection with no permit. New operator presume failed to file for change and surety? Old permit terminated 3/20/2000 by Order 439759, for what cause? (Failure to file annual report?) Was the operator fined for illegal injection and/or anything else? If so, how much?

F. Good Job

PD200300228 Noted problems wells—reduced rate request; noted original application indicated

high Fm pressure—Echometer run and application amended.

APPENDIX E
OCC Response to draft FY 2004 EOY

Oklahoma Corporation Commission
Oil and Gas Conservation Division
Response to EPA Region VI
End of Year Evaluation FY 2004

SWD-3

II Grant Work Plan:

C. Significant Non-Compliance – K&E Resources Brown #1.

The OCC has discussed this case with EPA on more than one occasion. OCC's first response to this case was in the OCC response to EOY comments for FY03. Initial investigation was on June 23rd, 2003. On July 1, 2003, the OCC suffered a reduction in force in which the Oil and Gas Division lost 20 % of its work force. One factor was the resignation of the District Manager for this district. The district caused this well to be plugged. The plugging of the well was interpreted as a corrective action. OCC UIC discussed this issue with the new District Manager and an enforcement action was taken and the operator fined. The OCC does not interpret this isolated incident as a **major program issue** and believes further discussion of this case is undue criticism. The OCC believes this case should be closed and these comments removed from the end of year evaluation for FY04.

III Program Revision: Section 1425

The OGCD recognizes that staff has been unable to respond to the Draft Program Revision Package questions submitted by EPA in April of 2004. As stated many times the OGCD suffered a 20 % reduction in force at the beginning of FY04 and combined with temporary 75% reduction in Management positions. OGCD simply did not have the staff to respond to all of the agency needs in a timely manner, which includes the response to the April 2004 letter. The OGCD believes the comment in the last paragraph is inappropriate. This is especially true when it is known that Region VI took six (6) years before the OCC received any response on the draft Program Revision Application. The OGCD believes the program revision is important and will respond to Region VI April 2004 letter.

Program Revision Section 1422:

The OGCD has written amendments to the draft 1422 class V well program as requested from comments received from EPA. A draft will be submitted no later than the end of June 2005.

B. Permit Review (2). Area of Review Maps.

The UIC staff uses the online information when the information is available. When the well information is not available, or when the data is incomplete, UIC staff will use the original hardcopy records to complete the missing information.

The OCC recognizes that the OCC online well data and the Oil Law records data may be incomplete or give conflicting information. Therefore, the UIC staff relies upon the official hard copy files when information is incomplete or conflicts with other information.

Correction: EPA has never provided funding to upgrade the OCC well records data management system. The only funding the EPA has provided is to purchase hardware and build software to design the initial (D-Base) UIC tracking system. EPA has provided very little financial support for data management over the last several years.

C. Field Inspection:

The EPA is not following proper protocols when requesting follow up information to inspections in the field. The Manager of UIC is the liaison for the OGCD not the field inspector. The UIC Department cannot insure the proper flow of information if the proper protocols are not followed. The EPA should notify the Manager of UIC when information hasn't been provided.

Oil Pollution Act and SPCC violations.

Oil Pollution Act and SPCC violations are not under the jurisdiction of the UIC program. These comments should be stricken from the end of year evaluation.

D. Complaint Investigations/Inspections:

The number of UIC complaint investigations for fy 04 is unknown.
IT is going to run another program from the inspection reports.

E. Specific Complaint Issues:

Baker #1

This citizen complaint filed by the Cherokee Nation is not related to the Oklahoma Class II well program. The EPA Oil Pollution Act fund committed to plugging this well because it is not related to the UIC program. This report should be stricken from the OCC end of year report.

Black Bear Creek

This subject should be stricken from the OCC EOY Evaluation there is no evidence that this case is related to any UIC activity, staff objects to this project being included in the UIC FY 04 EOY evaluation.

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300135	Altex Resources, Inc.	Black 1A SWDW	083-23476	479040	Non-commercial	Disposal-converted	8/7/03	yes-OCC & operator; same maps; injector overlap see comments	yes-OCC & operator; same maps; injector overlap see comments	yes; 24' 13% 20 md 1971 psi & 1350' 7% 10 md 2442 psi	AOR Matches Plat. Overlapping AOR's of injectors not relevant.
200300168	Koby Oil Company LLC	Hennigh 1	125-23255	479670	EOR	EOR-converted	8/22/03	yes-OCC & operator; OCC fewer wells	yes-OCC & operator; OCC fewer wells	yes--K and por flipped	K & por <u>are</u> flipped, but at zero pressure, no wells would be impacted. Operator supplied Herdon map which would show wells not penetrating injection zone. Corrected ZEI and no change.
200200015	Red Fork Production LLC INC.	D.L. Stanford B-1	107-00429	477759	Exception	Disposal exception	7/3/02	yes-OCC & operator; same map	yes-OCC & operator; same map	yes	1 well in AOR, not a problem well.
200300421	V. Dean Liston	Manuel 7	105-22693	483846	Non-commercial	Disposal amended app.; original app?	12/12/03	no	yes-OCC;	yes	No problem wells. Producing wells are producing from deeper horizons. Injection zone meets cement at these wells. Pulled up exhibits and Operator did supply plat.
200300370	Anadarko Petroleum Corp.	Norge Marchand Unit 69-3	051-22753	483328	EOR	EOR-converted; amended appl 10/24/03	12/1/03	yes-OCC & operator; OCC fewer wells, but no depths on operators	yes-OCC & operator; OCC fewer wells, but no depths on operators	yes	Operator did <u>not</u> supply depths on his plat. OCC map has fewer wells because we only list wells that penetrate injection zone.

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300207	Belport Oil, Inc.	Mattix 4 SWD		482970	Non-commercial	Disposal	11/21/03	yes-OCC & operator; operator fewer wells; pbm 4 open boreholes see comments	yes-OCC & operator; operator fewer wells; pbm 4 open boreholes see comments	yes, inc one by Belport	Very poor records. Operator provided locations. Injection to terminate if producing wells are plugged.
200300388	Citation Oil & Gas Corp. (taken over from Coho Oil & Gas)	East Velma Middle Bloc Sand Unit 158; EVMBSS U 158	137-04985	449187 initial 485346 new	EOR	EOR amendment; > interval & Pressure; < BTW	1/22/04	no	yes-OCC; Unit well list	yes	Operator did not supply map but did supply spreadsheet of wells within 1/4 mile radius.
200300157	Beta Operating Company, LLC	C. B. O'Brien 1 (WEHLU 188)	109-38643	477955	Non-commercial	Disposal-converted and deepening; amended 7/3/03	7/9/03	yes-OCC & operator; OCC fewer wells; injector overlap?	yes-OCC & operator; OCC fewer wells; injector overlap?	yes	AOR overlap is allowed. OCC map will not include wells Drilled or plugged after 1998 (recent rules for cementing prevent them from becoming problem wells). Also wells not penetrating the injection zone will not be included. Zero pressure - No AOR necessary.
200300386	Citation Oil & Gas Corp. (taken over from Coho Oil & Gas)	EVWBSS U 201	137-05273	482687	EOR	EOR-converted	11/11/03	yes-OCC & operator; operator fewer wells	yes-OCC & operator; operator fewer wells	yes	OCC map will not include wells Drilled or plugged after 1998. Also wells not penetrating the injection zone will not be included.

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300195	Calumet Oil company	G.W. Fisher 29 SWD	037-28644	478481	Non-commercial	Disposal-drilled	7/24/03	yes-OCC & operator; OCC fewer wells: 4 wells in inj zone; Op 25 wells, 2 w/l interval	yes-OCC & operator; OCC fewer wells: 4 wells in inj zone; Op 25 wells, 2 w/l interval	yes	OCC map will not include wells Drilled or plugged after 1998. Also wells not penetrating the injection zone will not be included in OCC AOR.
200300342	Beard Oil Company	Dotter 1	153-20291	485223	Commercial	Commercial	1/20/04	yes-OCC & operator; OCC fewer wells; injector overlap?	yes-OCC & operator; OCC fewer wells; injector overlap?	yes; 10% 15 md & 15% 20 md; 3 wells, inc 1 iodine; no pbm wells	AOR overlap is allowed. OCC map will not include wells drilled or plugged after 1998 (recent rules for cementing prevent them from becoming problem wells). Also wells not penetrating the injection zone will not be included.
200300428	Pontotoc Production Company, INC.	Beck 1	123-04608	486226	Non-commercial	converted disposal; amended 12/12/03 >> top inj & rate; amended 1/29/04 new Fm >> top inj, rate & Pr -- below base of mud plugged well (1842')	2/12/04	yes	yes-OCC; pbm 1 well mud plugged; deepened perf interval to avoid	yes	Deeper zone was used than on original AOR - no problem wells at this depth (Operator corrected by moving proposed injection zone deeper).

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300172	Oklahoma Oil & Gas Mgmt Inc	Ellis 1 SWD	133-24429	482833	Non-commercial	Disposal-converted	11/19/03	yes-OCC & operator; OCC fewer wells	yes-OCC & operator; OCC fewer wells	yes	Wells not penetrating the injection zone will not be included in OCC AOR.
200300358	Duncan Oil & Gas, Inc	Milburn 6	125-23509	481897	Non-commercial	Disposal - drilled	10/23/03	yes-OCC & operator; OCC fewer wells; injector overlap	yes-OCC & operator; OCC fewer wells; injector overlap	yes	AOR overlap is allowed. OCC map will not include wells Drilled or plugged after 1998 (recent rules for cementing prevent them from becoming problem wells). Also wells not penetrating the injection zone will not be included. Zero pressure - No AOR necessary
200300210	Anadarko Petroleum Corp.	Norge Marchand Unit 50-2	051-20920	481522	EOR	EOR amendment of Order 471084 - inc pressure by 1500 psi & MIT exception	10/13/03	yes-OCC & operator; same maps	yes-OCC & operator; same maps	yes	No problem wells.
200300228	Belport Oil, Inc.	Wickham 2 SWD		482971	Non-commercial	Disposal-converted	11/21/03	yes-OCC & operator; operator fewer wells; injector overlap; pbm >= 12 mud plugged wells; reduced rate	yes-OCC & operator; operator fewer wells; injector overlap; pbm >= 12 mud plugged wells; reduced rate	yes	Operator reduced ROE to avoid problem wells by acquiring porosity and permeability data and lowering rate of injection.

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300297	KLO	B. Miller 4		481190	Exception	Exception from min 1000 psi test down to 300 psig min.; Annual test to 300 psi for 5 years then every 5th thereafter		no	no	no	AOR was done for 1015 application PD #200000219 - Order #443066 issued 7/21/2000.
200200308	Red Fork Production LLC INC.	D.L. Stanford B-1	107-00429	461588	Exception	exception-csg	3/13/02	no	no	no	This exception was filed as a "CD" in our Tulsa court. The original PD # was 200200015T. I have included the PD#200200308. We intend to reject applications filed as a CD in the future. Refer back to Problem #4
200100012	Coho Oil & Gas, INC. / Citation Oil & Gas Corp. on computer list)	East Velma Middle Bloc Sand Unit 158; EVMBSS U 158	137-04985	449187 455810	EOR	EOR; exception to Pr test min	2/15/01	no	no	no	Both AOR's and ZEI in file.
200300172	Oklahoma Oil & Gas Mgmt Inc	Ellis 1 SWD	133-24429	476800	Emergency order	Emergency order application	6/10/03	no	no	no	Administrative review provided AOR for both operator and OCC, ZEI included. No wells penetrate disposal zone.
200300377	Agnes L. Jones	Jameson 5	105-24171	487197	EOR	EOR; amended appl. 2/20/04	3/9/04	no	no	no	OCC AOR and ZEI done.
200300263	Ada Lodge - (Benevolent & Protective) Order of Elks	Jay Paul 2	123-20892	480916	Non-commercial	Disposal-converted; amended 9/16/03	9/26/03	no	no	no	Wrong PD# actually #200300262. ZEI, OCC AOR and Company AOR in file.

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300268	Belport Oil, Inc.	L. Owens 5C SWD			Non-commercial	Disposal-converted	9/3/03	no	no	no	ZEI and both AOR's in file.
200300317	Patina Oklahoma Corporation	Loco Unit 8-3124	137-25813	480542	EOR	EOR-drilled; unit order 44245	9/17/03	no	no	no	ZEI and OCC AOR in file.
200300435	Pontotoc Production Company, INC.	Lucky 2	123-22755	484266	Emergency order	emergency	12/22/03	no	no	no	AOR was done for PD#200300412 Order #482445 issued 11/7/03.
200300435	Pontotoc Production Company, INC.	Lucky 2	123-22755	486057	Exception	exception-csg	2/9/04	no	no	no	AOR was done for PD#200300412 Order #482445 issued 11/7/03.
200300435	Pontotoc Production Company, INC.	Lucky 2	123-22755		Non-commercial	Non-commercial: amend original Order 344281 from 1/18/98; Csg exception granted 2/9/04		no	no	no	AOR was done for PD#200300412 Order #482445 issued 11/7/03.
200300272	Berexco	Rose 6	049-36416	482344	Exception	no amended application in file	10/28/03	no	yes-OCC	no	Original PD# 20030054. Both AOR's and ZEI in file. Problem well excluded as it is on other side of fault.
200300247	Topsail Secondary Recovery LLC	W-1	111-26987	487088	EOR	Drilled EOR	3/8/04	no	no	no	ZEI and both AOR's in file.

PD_No	Operator	Well	API Number	Order Permit	Type	Type-full	Granted	AOR maps-operator	AOR maps-OCC	ZEI calc	OCC Response
200300459	Oklahoma Basic Economy Corp.; Pontotoc Production Company, INC.	Webb 8	123-20059	486825	Exception	exception-csg	3/1/04	no	no	no	Original PD# 200300345. Both AOR's and ZEI in file



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

APR 13 2006

*See: N. Dorsey
6WQ-SG*

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2005 (FY05). On September 7, 2005, Ms. Nancy Dorsey visited Oklahoma Corporation Commission (OCC) offices and took part in discussions with Mr. Tim Baker and Mr. Charles Lord about current UIC program implementation issues. Mr. Michael Vaughan of our Grants Section joined in by telephone. By e-mails on November 23, 2005, we invited OCC's comments on the draft evaluation. This report considers OCC's comments received by e-mail on January 9, 2006. The FY05 evaluation is subdivided into sections:

- I. Introduction
- II. Grant Work Plan
- III. Program Revisions
- IV. UIC Oversight Issues

OCC's Annual UIC Narrative for FY05, (see Appendix B), lists the primary objectives of the UIC program during FY05. The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed requirements. Reports are important measures of OCC's compliance with UIC Safe Drinking Water Act (SDWA) standards, yet there was a significant delay in reporting the annual UIC narrative report. OCC's annual 'narrative' report is part of the UIC Grant Work plan commitments, (due on August 15, 2005 and received on December 9, 2005).

Regarding OCC's submission of requested UIC program revisions, SDWA 1425 for Class II injection from OCC, and joint SDWA 1422 from ODEQ and OCC for Class V wells, we request that this process be expedited. Past End-of-Year reports document the on-going concerns related to this issue. To quickly recap the status, following are the current issues:

- Class II UIC Program implemented by OCC under SDWA 1425: EPA is waiting on answers to 11 questions, in a letter to OCC dated April 8, 2004 (Appendix C with enclosures).
- Class V UIC Program implemented by ODEQ and OCC under SDWA 1422: Joint 1422 submission is needed from ODEQ and OCC. Via letter from Mr. Tim Baker to Larry Wright dated August 5, 2005 (attached), OCC transmitted proposed regulations for Class V wells under "jurisdiction" of OCC's oil and gas division "in response to Region VI comments received in April 2002." Those proposed regulations cite applicable federal UIC regulations regarding applications for a "Class V underground injection well (a brine mining underground injection well)." The wells in question are spent brine return wells following halogen removal [Class V, by rule at 146.5(e)(14)]. However, the rulemaking does not address the Class V aquifer remediation wells associated with above ground storage tanks (AST) and underground storage tanks (UST) cleanup

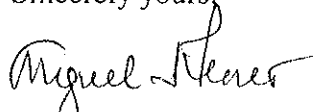
operations under OCC Fuels Division authority, and appears only to refer to "brine mining" wells which are under ODEQ Class III jurisdiction, not OCC. Mr. Baker's transmittal letter indicates that the proposed regulations are in response to EPA's "April 2002" comments (actually May 28, 2002, crosswalk attached). Other issues regarding our crosswalk comments remain to be addressed and resolved.

I suggest a meeting between UIC program people from our respective agencies to discuss ways to resolve these issues. I will contact you in the near future to discuss this proposal. In addition, I would like to see all new program revisions rolled into their respective packages.

This End-of-Year has raised a number of issues, including those discussed in our September meeting (Appendix E). OCC's response, based on an earlier draft of this document, is incorporated throughout the document. This revised document incorporates changes based on the information supplied with the OCC response of January 9, 2006.

I remain confident that together we will address all significant UIC issues through the program revision process. Our common efforts must assure adequate protection from UIC activities for underground sources of drinking water as mandated by SDWA. If you have any questions on UIC program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Nancy Dorsey at (214) 665-2294, or Michael Vaughan at (214) 665-7313 about any UIC or grant related matters.

Sincerely yours,



Miguel I. Flores

Director

Water Quality Protection Division

Enclosure

cc: Tim Baker, OCC Pollution Abatement Manager (w/encl.)
Charles Lord, OCC UIC Manager (w/encl.)

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2005 (FY05)
July 1, 2004 through June 30, 2005**

I. Introduction

The Oklahoma Corporation Commission (OCC) is the lead agency for the State's UIC Class II wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities between July 1, 2004 and June 30, 2005.

On September 7, 2005, EPA Region 6 representatives met with OCC management and staff for EOY evaluation discussions (see Appendix A for attendees). This report is subdivided into Grant Work Plan, Program Revisions and Oversight Issues. Appendix B contains OCC's annual narrative required in the FY05 UIC grant work plan. Appendix C is a copy of the April 8, 2004 letter from EPA on the revision packages, to then acting Division Director Tim Baker. Appendix D contains information gathered during EPA's review of well files during this annual evaluation. Appendix E contains information from EPA's visits to sites regulated by OCC.

II. Grant Work Plan

A. FY2005 Grant

The approved Federal FY05 allotment for the State of Oklahoma's UIC program administered by the OCC was \$292,300, and this amount was awarded to OCC in FY2005. OCC was also awarded \$35,000 in UIC special project funds in FY2005. These special project funds were used to purchase laptops for use in the UIC program. OCC submitted an application for \$1,047,220 in federal funds.

Work plan Deliverables--Table 1 identifies State program updates and other deliverables required during FY05. OCC did not amend/correct last years third quarter or final 7520 filings. This fiscal year OCC was again significantly delinquent on several deliverables: The 7520 reports as noted in Table 1, and the annual UIC narrative report due August 15, 2005.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	7/30/04 10/30/04 1/31/05 4/30/05 7/30/05 10/30/05	11/17/04 incorrect filing; revised 1/31/05 still incorrect 2/1/05 incorrect filing 9/09/05 fax 7/08/05 fax 9/09/05 fax 10/27/05 fax; 10/28/05 fax - revision
Grant Work plan/Application: FY05	5/01/04	5/11/04

Annual UIC Narrative Report	8/15/05	12/9/2005
Final Financial Status	9/30/05	9/26/2005
UIC Well Inventory	10/30/05*	10/30/05

* The date for the well inventory was changed this year to match the federal fiscal year, in order to comply with a PAM measure required by EPA headquarters.

B. UIC Program Activity Measures Reporting

OCC assisted Region 6 in compiling the UIC Measures Tables for Oklahoma, in a timely manner.

C. Special Projects

EPA provided special project funding for 8 laptops distributed to field inspectors. The objective is better reporting and improved effectiveness through having well locations, maps and permit conditions easily accessible in the field. After a slow start in creating the maps and overcoming distribution difficulties, the units were distributed to field operations. Communications improved with the ability to instantly e-mail field inspection photos to enforcement and to report wells not on the maps provided. Based on the success of the initial laptops, OCC filed a FY06 special project application for additional laptops for the remaining field inspectors and their supervisors.

III. Program Revisions

A. Update of Draft Section 1425 Program Revision

Since OCC's submission of a draft Class II UIC program revision package in December 1998, many issues first identified during the region's program review dated December 15, 1997, remain unresolved. The Region continues to seek interpretation and guidance from EPA headquarters on several permitting issues, including area of review requirements. Correspondingly, Region 6 responded to OCC's 1998 draft Class II UIC program revision package on April 8, 2004, with a request for additional information on water quality protection standards, area of review effectiveness criteria, financial assurance, and corrective action authorities. While preparing a response to EPA's request, OCC requested multiple deadline extensions including the latest via e-mail on April 14, 2005, offering the end of June 2005 as a qualified answer date. The topic was broached again at the EOY review on September 7. To date no response or additional extension requests have been received.

Resolution of this longstanding issue is important. EPA requests OCC's Oil & Gas Conservation Division Director expedite the submittal of a complete 1425 Program Revision.

B. Update of Draft Section 1422 Program Revision

In a draft joint program submission with ODEQ dated June 30, 2000, OCC seeks UIC Primacy authority for certain Class V activities: ReInjection of spent brine into the same formation following halogen removal and aquifer remediation wells associated with leaking petroleum storage tanks. In 2002, at EPA's request, both Agencies submitted regulatory crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 sent comments to both agencies on May 28, 2002, and as of this report, EPA continues to await resubmission from Oklahoma's UIC Primacy agencies of an amended revision package for SDWA Section 1422 authority. Currently SDWA authorization of all Class V UIC activities lies with ODEQ, not OCC and will do so until EPA approves a revision to Oklahoma's applicable program pursuant to 40 CFR Part 145.

After renewed requests by EPA for both program revision packages, Mr. Tim Baker transmitted to Larry Wright in a letter dated August 5, 2005, OCC's proposed regulations for Class V wells under "jurisdiction" of OCC Oil and Gas Division "in response to Region 6 comments received in April, 2002." Those proposed regulations cite applicable Federal UIC regulations regarding applications for a "Class V underground injection well (a brine mining underground injection well)." The wells in question are spent brine return wells following halogen removal [Class V, by rule at 146.5(e)(14)] not Class III brine mining wells. In addition, the rulemaking does not address the Class V aquifer remediation wells associated with AST and UST cleanup operations under OCC Fuels Division authority, referring only to "brine mining" wells which are currently under ODEQ jurisdiction. Mr. Baker's transmittal letter indicates that the proposed regulations are in response to EPA's "April 2002" comments. Other issues regarding our crosswalk comments remain to be addressed and resolved.

Resolution of this longstanding authority issue by a joint OCC and ODEQ 1422 final Class V revision package is very important. EPA requests OCC's Oil & Gas Conservation Division Director work with ODEQ's management to expedite the 1422 Program Revision process.

IV. UIC Oversight Issues

OCC headquarters is commended for its enforcement staff's responsiveness to EPA informal requests for information and action on wells with enforcement issues and the improved responsiveness from District offices. OCC continues to annually conduct and witness mechanical integrity tests for greater than 20% of the inventoried injection wells. Oklahoma's Class II UIC operators generally comply with the MIT requirements of OAC 165:10-5-6. Despite OCC's measures to increase operator filing of Form 1012, monitoring and reporting is the primary violation seen (Figure 1). Mechanical Integrity Violations cover failure to test on schedule through failed tests with significant leaks, (only 4.7% of all tests in 2005 failed; 2004 was a reporting problem.) By the end of 2005, 20% of the reports were still outstanding.

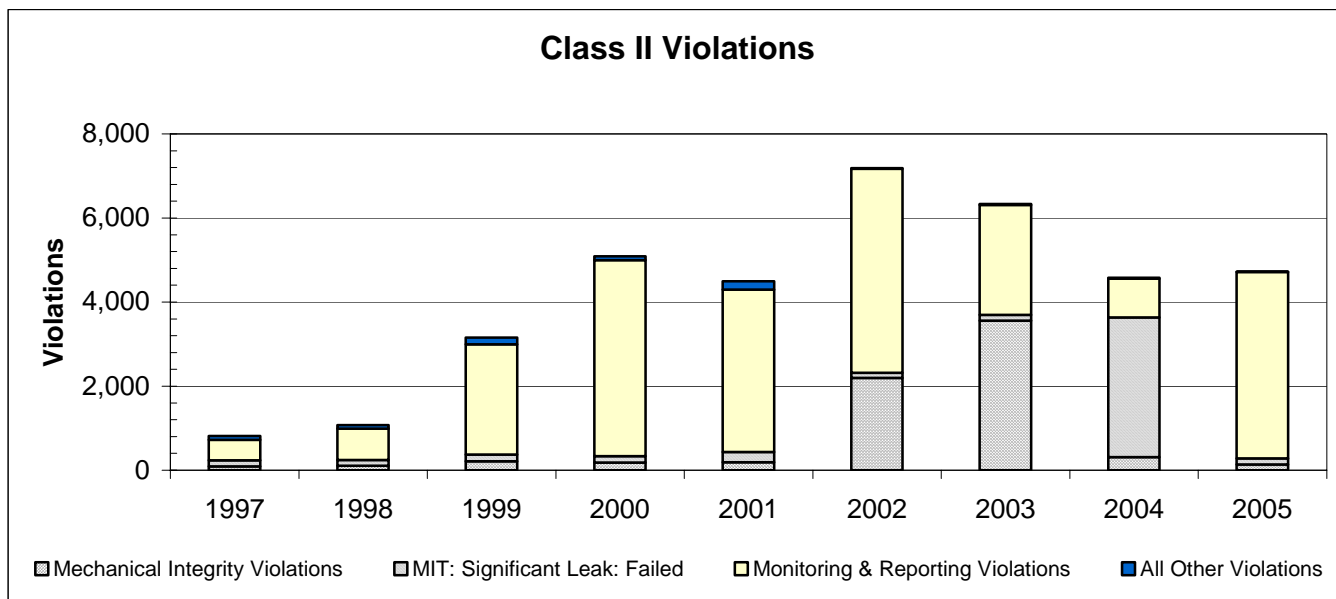


Figure 1: Violations

A. End-of-Year (EOY) Discussion Points

Several topics in addition to the annual EPA file review were discussed at the EOY meeting: Inconsistent violation penalties, filing problems, suggested communications improvements, and recurring implementation issues. EPA conducted a file review examining 49 of the 401 OCC permit orders dated between April 21, 2004, and March 25, 2005. Information missing from some files was found in the new online imaging system. Appendix E lists the specific issues found, which were discussed previously with OCC. The response to the few relevant items has not been received, (Sections D through E).

There continues to be inconsistency in violation penalties imposed. During the EOY meeting, inconsistent violation penalties were discussed in general terms. A generic description of the process clarified that field inspectors request a specified fine, but an OCC attorney may accept an alternate offer under certain conditions, and either a judge or a district manager can lower the requested fine. OCC rules also specify a maximum fine, not a set fine as for illegal injection, and contempt filings on top of 'tickets' are variable up to a maximum of \$5000. **OCC 165:10-5-2. Approval of enhanced recovery injection wells or disposal wells** states, "The Commission shall fine an operator \$5,000.00 for any violation of this subsection," does not appear to offer flexibility in an applicable fine, yet the rule is not routinely applied. OCC has requested a legal opinion as a result of this EOY.

During the EOY discussion, OCC staff mentioned that certain attorneys file UIC applications under the Conservation Docket (CD) code, as opposed to the Pollution Docket (PD) code. This effectively would prevent the permits from entering the UIC database. As a result of this draft EOY, OCC's UIC Manager has recommended a rule change to prevent this from happening in the future.

EPA recommended increased communication between the Pollution Abatement and UIC sections with respect to any occurrences of brine from ground water that may potentially relate to UIC activities. Field Inspectors have discussed surface breakouts from UIC problems with EPA representatives during specific case meetings, yet OCC has never reported contamination of ground water from UIC activities in annual 7520 reports to EPA.

OCC response to draft of this EOY: "Not all breakouts result in contamination of ground water. As we discussed earlier this week breakouts are the result of brine taking the path of least resistance. If it has broken to surface, then it is not likely to contaminate ground water directly. I believe this is important and will take steps (reviewing 1085 complaint reports) to insure all "cases of alleged contamination of a USDW" are reported."

Permit issues reported in prior years relating to operators submitting information needed to properly calculate the zone of endangering influence remain unresolved. Discussion for improvements in the process centered around better data management issues: Correctly entering information (such as special requirements) into the OCC UIC database so that periodic reports can be generated to verify compliance with all permit conditions.

B. Field Inspection

EPA visited the District III office, an enhanced recovery operation (EOR), and four commercial operations on June 8-10, 2005, respectively as reported in Appendix E through G. The Healdton Field EOR is in southern Carter County, and was selected based on an internal EPA report from the Pawhuska office of brine running across the road in August 2004. The field has been in operation since the early 1900s. During the life of the field significant salt scarring has occurred. Four injection wells are located within the quarter section of interest, along with a series of retention ponds installed to prevent brine runoff. Some of the ponds had elevated salt concentrations up to 72,000 ppm TSS. Several of the injection wells tested minimal casing pressure. Follow-up monitoring over the next nine weeks recorded no increase in casing pressure, nor significant change in tubing pressure in any of these wells, supporting

some degree of mechanical integrity. All the wells passed the required mechanical integrity test within this five-year cycle.

The four commercial operations in Garvin County were all sites of prior OCC enforcement actions, some still on-going. The primary finding from these visits was the lack of follow-up on monitoring wells at commercial operations required as part of special permit conditions.

The problem of special permit conditions effectively disappearing from the tracking system was discussed at the End-of-Year. Region 6 strongly recommends that OCC devise a practical method of checking up on special permit provisions such as monitor wells. As an example, it was suggested that inspectors check the required monitor well reports on depth to water and sample results, when conducting mechanical integrity tests or other site inspections.

APPENDIX A
STATE/EPA Staff in Attendance
September 7, 2005
FY 2005 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Mike Vaughan	Environmental Protection Agency	(214) 665-7313

APPENDIX B
Oklahoma Corporation Commission
Class II Well Program
End-of-Year Narrative FY05
Oklahoma Corporation Commission
Class II Well Program
End-of-Year Narrative FY05

The Oklahoma Corporation Commission, Oil and Gas Division continues its effort to make Commission data available to the public in more useful formats. The Commission has contracted SCI (Strategic Consulting International) to create a GIS viewer for the OCC. The viewer will be available on the Commission website and will include UIC, Oil and Gas well data.

The commission, with the help of EPA grants, is issuing laptop computers to its field inspectors. Sixteen of these laptops are now in the field with the remaining 40 currently being configured for use. The inspectors have also been issued Garmin hand held satellite positioning devices to determine their position in Lat-Long. The laptops have GIS software that allows the Inspector to use aerial photos and commission well data to locate and identify the legal locations of disposal and injection wells. The UIC database will be loaded on these computers sometime in early 2006. This will facilitate UIC inspections by making them faster, easier and more accurate, with violations of UIC regulations being determined quickly in the field.

The UIC program continues to experience high permitting activities as seen in prior years. This year the UIC Department approved 247 disposal wells and 269 enhance recovery wells totaling 516 UIC wells.

The increase in recent years is obviously a reflection of the price of oil that has greatly increased in the last two years. The OGCD maintains witnessing mechanical integrity tests a high priority, once again witnessing 100% of the 1,181 disposal wells and 1,771 enhanced recovery wells tested this year. Another interesting statistic is the failure rate of the mechanical integrity tests has reached an all time low of 4.7%. This is believed in part due to the OGCD's policy of witnessing a high percentage of the mechanical integrity tests while in addition newer wells being converted to UIC wells as the number of rule authorized or wells authorized prior to primacy continue to decline. In addition to the MITs that were witnessed by field inspectors, the OGCD conducted 11,365 routine inspections on Class II wells. This is a reflection of the OGCD's policy of maintaining UIC inspections as a high priority with the agency.

Although the OGCD did see a dramatic budget decrease in state fiscal year 04 which manifested into a reduction in force. The OGCD was able to maintain UIC work plan commitments. The OGCD was allocated a budget increase in state fiscal 05 which allowed the agency to fill some vacant field personnel positions. The OGCD will continue to look for ways to cut costs while maintaining a quality program, such as modernizing information technology. However, funding revenues continue to be the major stumbling block in making long range planning a realistic goal.

APPENDIX D
FY 2005 File Review Issues: *OCC Responses Embedded*

A. Program Operational Changes

New program lists failed MITs. Quarterly notices sent out. (Don Yarbrough)

B. Enforcement Issues

Rule: W/I 90 days of cessation of commercial well operations, the well must be plugged, the pit(s) cleaned and closed.

- Non-commercial injection, pass 1012-A + active production = do not have to plug
- **R&B Trucking Dolezal 1-A**; Logan Co.; 9 years after operations ended well unplugged and pit still there. OCC Judge ordered clean-up, operator appealed. OCC Commissioner (Jeff Cloud) ... commercial well doesn't have to be plugged, if active production and non-commercial injection, which passes 1012-A.

Field Inspection Fines much lower than law requires, generally \$0 - \$500.

- **R&B Trucking King 1**; \$500 field inspection filing

Other Enforcement Actions

- **Pawnee Waters 9-1D** pit filled; from EPA inspection report
- **Stan Lacky**, Creek Co. called EPA, District and HQ; 'old well being used for night disposal'; Found tank battery on site visit, but hose not connected at the time. Operator, Orville Wills admitted illegal disposal(?), 'but not putting any water in ... Stan Lacky adding the water.' Stan put up camera. Orville agreed to plug well, asked about cost of the fine and was 'going to the bank to get the money'. Jim said no contempt would be filed if the well plugged.

C. File Problems reviewed with Charles

Thicknesses used in the AOR analysis are frequently the total injection interval (base – top), even over separate formation. Effective thickness should not equal gross interval.

A number of files contained incomplete information, however the information was in the scanned records. The files were all found either waiting to be filed or misfiled (not in PD). *OCC response: It is, at this time, legal for applicant to file under CD (conservation docket).*

PD2005- 50; Order 502609 EOR; 4 problem wells found, but no additional/modifications added to Order. *OCC response: Order #502609, the Operator supplied the Commission a copy of core data on the injection horizon along with fluid levels. This gave a calculated ZEI of zero therefore while within the AOR the four wells are not a factor.*

PD2004- 496; analysis and publication notices match initial application, not final amendment. *OCC response: There are two amended 1015's dated 12/9/2004 and 1/3/2005.*

PD2004- 279 no data in file, just Application & Order. PD2004- 346 was same Order (well, injection); file contained all data. Janet Kitchens said PD2004-279 vacated by operator, because the well name was misspelled in the Order. AOR map marked as 279, but refilled in 346. *OCC response: We used the same AOR in 346 that was used in 279. Same area, nothing had changed.*

D. Follow-up:

PD2001- 401 Citation Healdton V Un 2-43 application to increase injection rate and interval **dismissed**; followed by several Emergency Orders, and exception Orders; new application to increase rate and zone PD2004- 272 still in Van's work area. Which rate are they currently injecting at—the old

or the not yet approved new? (API 35-019-12912) *OCC response: At the injection rate approved by the emergency order.*

- 1012A 2003 injection 420 psi 600 BWD; no 2004 report

PD2000- 363; TDU R1-6 Louis Dreyfus Natural Gas, EOR Order 450475; & PD2004- 163 Dominion Oklahoma Texas E & P, EOR Order 492098.

- Both Orders require monitoring fluid levels in specific wells; the later specifies that the Order terminates if the fluid level(s) reach within 900' of the surface
- Have these wells (SDA-1 & RI-1) ever been monitored? Has this been reported, or has the inspector checked on the results? (Neither Don nor Jim has seen anything on this.)
- What is the current fluid level? *OCC response: The Operator is required to keep this data available for Commission personnel to review.*

E. CBL required before injection can start; notation in electronic files; that CBL arrived and was approved;

- Inconsistent notations in comment fields; examples:
- PD2004- 279, Order 494497, Chambers 4, PD2004-346, Order 498203; CBL \geq 920' to surface; MIT run 3/24/2005 at 500 pounds; CBL received? Well injecting? *OCC response: If the operator has been given a order # then the CBL has been received and if MIT is passed they can inject.*
- PD2004- 362, Order 499171, Cushing Coop WFS S-1, cmt squeeze 860' to 599' in 8 5/8" csg , followed by CBL; MIT 4/1/05 300 pounds
- PD2004- 386, Order 500467, Adams Estate 1, to be drilled/deepened, MIT & CBL required; no test yet

OCC response: The CBL is sent to one of our engineers for review and approval. The Operator does not have a valid permit until this is done.

F. Issues

SNC list: only from Jim, Districts are not reporting illegal injection, except for referrals to HQ.

OCC response: All snicks are reported to Jim Rowe.

No cross discussion with Pollution Abatement on surface problems with UIC

Thomson #2 (spelling?), Pontotoc Co.; P&A last summer 6/25/04; non-existent or bad casing (no mechanical integrity); a purge to surface across the street, stopped after well plugged. Pollution abatement hydrologist had been working on the purging problem for 8 years

Additional fields needed in file database (DB) system; tracking system needs to be improved to allow reporting on special Order requirements, like MIT and 1012A listings

- MIT notice list(s?) separate executable run on master database
- requires care not to be lost with program changes
- understand it has been 'lost' before(?);
- Additional QC on special Order entries; PD 2004-346 (or one of the others listed above) was not entered into the comments field

- Additional QC on tracking receipt of CBLs; checked in and reviewed by separate people (?), both should make notes in file DB.

G. Well Done / Good Procedures

MIT tracking: computerized lists (kept)

- annual MIT due & quarterly follow-up of failed MITS: mail out of notices (not kept); *OCC response: Volume just too large to keep individual letters. Letters are sent to Operators of all wells in arrears.*
- notices sent out prior to District meeting; copies given to inspectors; *OCC response: If Operator does not come into compliance, we request district office red-tag well.*

Information Notes

- New orders supercede, regardless of whether previous order vacated.

OCC Site Visits & District III Discussions

As of 11/23/05

APPENDIX E FY 2005 Site Visits & District III Discussions June 8-10, 2005

I. 1918 Healdton discussion

Section 15-16

- federal lawsuit (several yrs ago) paid landowners for environmental damage
- drilled monitor wells for lawsuit; one just plugged by OWRB
- 6k to 2k ppm in creeks in summer
- soil around 25k range, 2 months ago Citation spill
- background above spill higher than remediated spot; Terry & Gene Voheis flushed soil; 5k Cl on avg
- last night (June 7) vandals backed off stuffing box at oil well, caused spill, sheriff called
- most producers don't have cmt behind pipe
- not required at time drilled
- cable tool wells

II. Dundee Field

Creek up to 10k

Section 16 T2S R2W, Citation, Gunter complaint area

Well	QQQ	FSL	FWL	FEL	FNL
BG 1	SE NE NE			330	
5 CPU 4					
G6 CPU 7	E NE NE	1485	2145		
7 3	E NE NE	2005	2145		
9	SE NE NE	1485	2445		
Gene Cox 4 DD CPSU 17	NE SE NE			330	330
Gene Cox 13 CPSU 20	SW NE NE NE	825	2145		
Gene Cox 12 CPSU 21	NE SE NE	825	2475		
CPSU 75	SW SE NE	200	1485		
CPSU 24	NW SE NE	725	1815		
Gene Cox 1	SW SE NE				
Gene Cox 5	SE SW NE			2310	1650
R A HEFNER 1	SW NE NE				

CPSU 3-I	NE SE NE	990	2600		
CPSU 11	NW SE NE	990	1650		

SECTION 15 T2S R2W

Well	QQQ	FSL	FWL	FEL	FNL
E&G COX 3 CPSU 18	NW SW NW	990	330		
E&G COX 9 CPSU 27	SW SW NW	495	165		
E&G COX 1	SW SW NW	330	330		
CPSU 63	NW SW NW	750	280		
E&G COX 7 CPSU 15	NW SW NW	1155	165		
E&G COX 8 CPSU 22	NW SE NW	825	165		
1-I	C SW NW	660	660		
62	C S SW NW	330	660		

III. Site Visit: south Carter County; Healdton IV

- With OCC Inspector Terrell Bolles on June 9; Pictures in Appendix F
- Received copy of well map for Section 10S, 15, and 16E
- Former Unocal Field; 9-spot or 5-spot EOR

A. EPA wtr enforcement complaint.

- site visit 8/26/2004: ponds overflowing across road 4 places
- 2800-5300 ppm TSS, into dry creek
- 8500-15000 ppm TSS, into dry creek
- 8 to 18k ppm TSS
- 300-600 ppm

B. Stop 1:

- Oil spill (see worksheet) H IV 8-15 SE NE NW 16-4S-3W;
- 34° 12' 54.728" N 97° 31' 8.052" W WGS 1984
- no BHP; injection – on vacuum to several 100 pounds—function of fault block its in
- Kent Hunter superintendent of Healdton area for Citation O&G
- Unocal well 12 yr ago; flowed 60 BPH for 30 days; cmt tbg in; has valve & tbg to run MIT
- Dry wash – unnamed creek, starts in 15 SW NW corner and runs into section 16
- 15-4S-3W Healdton IV 14W-30 OCC 324736

C. Stop 2: 15-4S-3W NE NE NW, Healdton IV 14W-30 Photos 1 & 2

- OCC 324736: R60916A: 34° 12' 57.508"N 97° 30' 4.044"W
- some pressure on backside
- inj 704 BWPD +/-
- 430 psi on backside (csg/tbg annulus), bled off –how fast rebuilds?
- Tbg 85 psi w flow-line closed; open 745 BWPD
- 185-200-220 psi inj; 235 psi weekly avg
- 5 star flood not changed from Unocal

D. Stop 3: 15-4S-3W SE NW NW, Healdton IV 12-12

OCC : R60917A: 34° 12' 48.663"N 97° 30' 21.35"W

- 4 lines off nearby header
- 30 BWPD

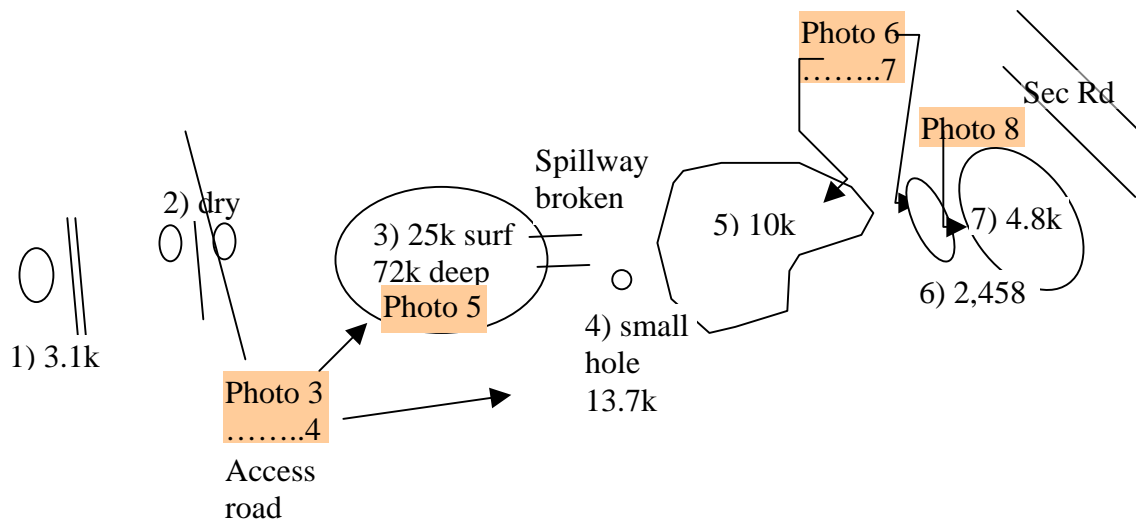
E. Stop 4: 15-4S-3W SE NE NW, Healdton IV 14-27

OCC : P235179; R60917B: 34° 12' 51.46"N 97° 30' 9.325"W

- 900 BWPD
- tbg 380 psi flow line closed; 410 open; slight water leak around seal
- a little fluid on backside, no pressure

F. Stop 5: 15-4S-3W SE NW NW, retention ponds

- Ponds created to hold back salty water from creek; pumped when pull



1. 34° 12' 39.046"N 97° 30' 20.848"W
2. 34° 12' 38.886"N 97° 30' 22.703"W
3. 34° 12' 40.688"N 97° 30' 24.590"W

- 4.
5. 34° 12' 41.117"N 97° 30' 28.574"W
6. 34° 12' 40.519"N 97° 30' 29.509"W
7. 34° 12' 41.144"N 97° 30' 30.577"W on hill overlooking

Request to Operator

Monitor backside pressure of 4 injectors weekly; (avg BWPD, tbg Pr and csg Pr), if 0 for over a month go to every 2 weeks

G. Stop 6: 15-4S-3W NE NE NW, Healdton IV 14W-30 (revisited)

Backside no pressure build-up; 700 BPD avg for week, 235 psi tbg

H. Stop 7: 15-4S-3W W NW NW, Healdton IV 12-11 Photo 16

OCC 81210: 34° 12' 58.672"N 97° 30' 34.252"W

- 1250 BWPD
- 540 psi closed; 580 psi open; 75 psi on backside w pkr fluid, (foamy) corrosion inhibitor

I. Stop 8: Section 16-4S-3W Photos 17-19

State plugged wells: 34° 12' 37.498"N 97° 30' 36.632"W;

34° 12' 39.508"N 97° 30' 36.260"W;

34° 12' 44.788"N 97° 30' 36.431"W; one that flowed?; inj well symbol on csg

J. Stop 9 different catchment area, below tank battery Photos 1-2

- 6400 ppm stream: 34° 12' 25.725"N 97° 30' 7.825"W
- from catchment area, but greater volume—coming in laterally from sides?

K. Stop 10: disposal well at tank battery complex Photos 3-5

H IV 25W-31 NE NE SW 316471;

- 740 – 700 psi tbg; 0 psi backside
- 280 BWPD
- will regrade slope & fix berm per tanks

IV. Site Visit: west Garvin County

With OCC Inspector Don Frazier on June 10; Pictures in Appendix G

A. Stop 1: Snelgroves, Bob 1 (1-10) 10-3N-2W NW SE

- OKC Enforcement case: 4/7/05 operating commercial w/o permit
- 1999 commercial well across rd caused wells to wtr out; so plugged and inj moved to this well
- Now Operating under emergency order at 2000 psi test +pollution pbm
- Order 432812 max rate 2000 & max pr 2000 1015
- Filled contempt illegal commercial disposal
- Used as commercial w/o permit since 1999
- Should be \$5k w/o court; \$10k in court settlement
- Discovered when CPA asked for skimming permit info
- Started w tax complaint – about skimmed oil
- Found to be commercial, shut down by field supervisor
- OCC attorney settled out-of-court w/o OKC consent or knowledge
- Attorney changed strong case to no case btwn one day and next
- Charles Lord & Suchard witnessed conversation btwn Jim Rowe & attorney
- Snelgrosse lawyer called Don Frazier & wanted to settle out-of-court, said Foster okayed it
- Attorney (foster) new OKC did not want to settle out-of-court
- Attorney to leave this Friday (June 10)
- Operator paid fine \$2.5k & got permit
- Letter to EOJ said shouldn't sign order
- 730 psi tbg pr, not flowing
- forgot to GPS

B. Stop 2: A&H Allen #1 SW SE NE 10-3N-2W; Commercial

OCC 290266; R061016A: 34° 44' 50.737"N 97° 23' 26.814"W

- OKC Enforcement case:
- Order 290266 max inj 4000 BWPD 2000 psi 1015
- Order 381532 max inj 4000 BWPD 2000 psi 1015A
- Check out pit, NW corner salt kill (comment for this location?)
- Should have been remediated
- Tank leaked twice—no record of problems in Duncan office since 2003
- 6/3/05 passed MIT, 2000 psi, commission

- Pr gauge 1500 psi (max reading) dripping at joints
- No flow meters: calculated in site foreman's head from volume & times pumping
- Approx. 120 BPH when pumping: guess based on time
- Volume according to information driver fills out
- No record of times injecting
- Pump on level trigger

- 3 MW never checked in 8 years site foreman there

MW 34° 44' 50.83"N 97° 23' 25.242"W; cap rusted closed

MW 34° 44' 47.855"N 97° 23' 25.936"W; cap rusted closed

MW 34° 44' 49.594"N 97° 23' 30.21"W;

1. H2S Issues

Juan Caride, lawsuits; horse ranch SW of tank farm w H2S

Check on Matthew for copy of report to be sent to OCC—complaint response

- No H2S useful monitoring/training in fed regulations?
- OCC not enforcing

C. Stop 3: Jasmine, Little Bit 3 SW SW section 7-3N-1W

34° 44' 30.084"N 97° 20' 59.575"W

- OKC Enforcement case: inj w/o permit filled w Allen Foster by OCC HQ, dismissed (by Foster) because "filled by field inspector"
- Checked out w District- well red tagged and referred to OKC
- Don B. field inspector
- Filled out 1085 & referred to legal
- Operator paid fine & got permit
- Production NE SW SW; 25 mcf; today 5.3 mcf ½"
- New pit or recent clean-up
- Inj on hill above production
- New MIT req. w change of operator; last MIT?

D. Stop 4: Oktex Oil, tank battery

34° 44' 13.71"N 97° 9' 3.79"W

E. Stop 5: Oktex Oil, injector, Nabors 1 13-3N-1E SE NE NW

Order 376033, Aug. 23, 1993; 61018: 34° 44' 10.112"N 97° 9' 8.785"W

- OKC Enforcement case: 9/30/02

- Facility leak, salt water disposal permit violation
- 10/08/2002 MIT passed; ownership contested in bankruptcy court
- Maier Res. Co. now operator, complaint closed
- Well clean (no sign), pit pbm – supposedly clean
- 750 max rate 600 max pr
- filed contempt
- Emergency Order 372378: claim of financial loss from 2 wells production: expired on May 1, 1993
- No signs
- Right by creek
- New tbg gauge; no gauge on backside; no flow gauge

F. No stop: Eola 1 5-1N-2W

- OKC Enforcement case 200300251
- Bond forfeiture in 2003, \$25k should inc remediation
- To be plugged according to Ron Smith—waiting on weather to dry out
- OERB will finish remediation
- 17 yr old mud pits, never used

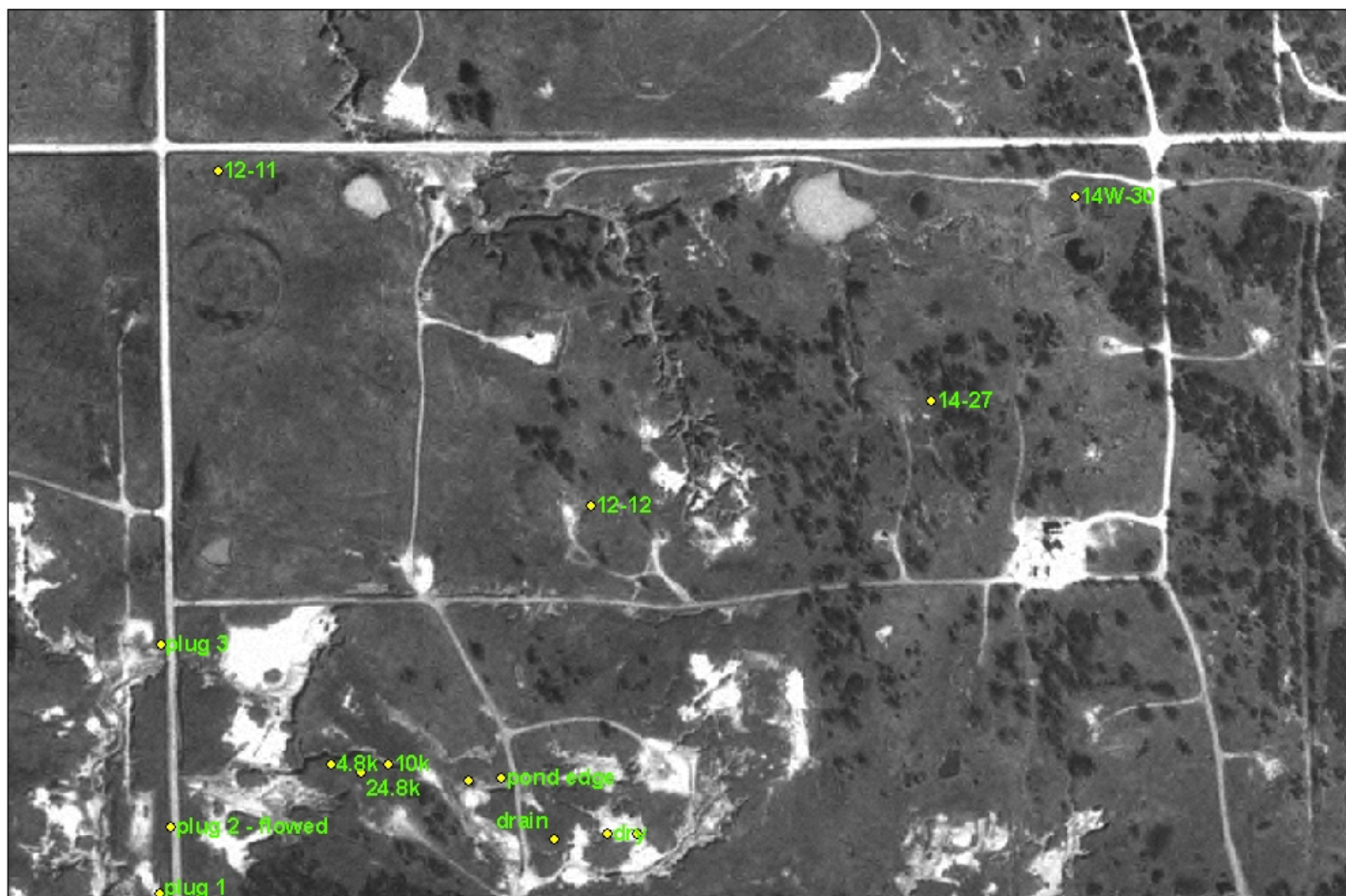
Appendix F: Photos June 9, 2005

Photo 1 11:18 AM Stop 2: 15-4S-3W NE NE NW, Healdton IV 14W-30



Photo 2 11:24 AM Stop 2: 15-4S-3W NE NE NW, Healdton IV 14W-30





Carter Co, Oklahoma

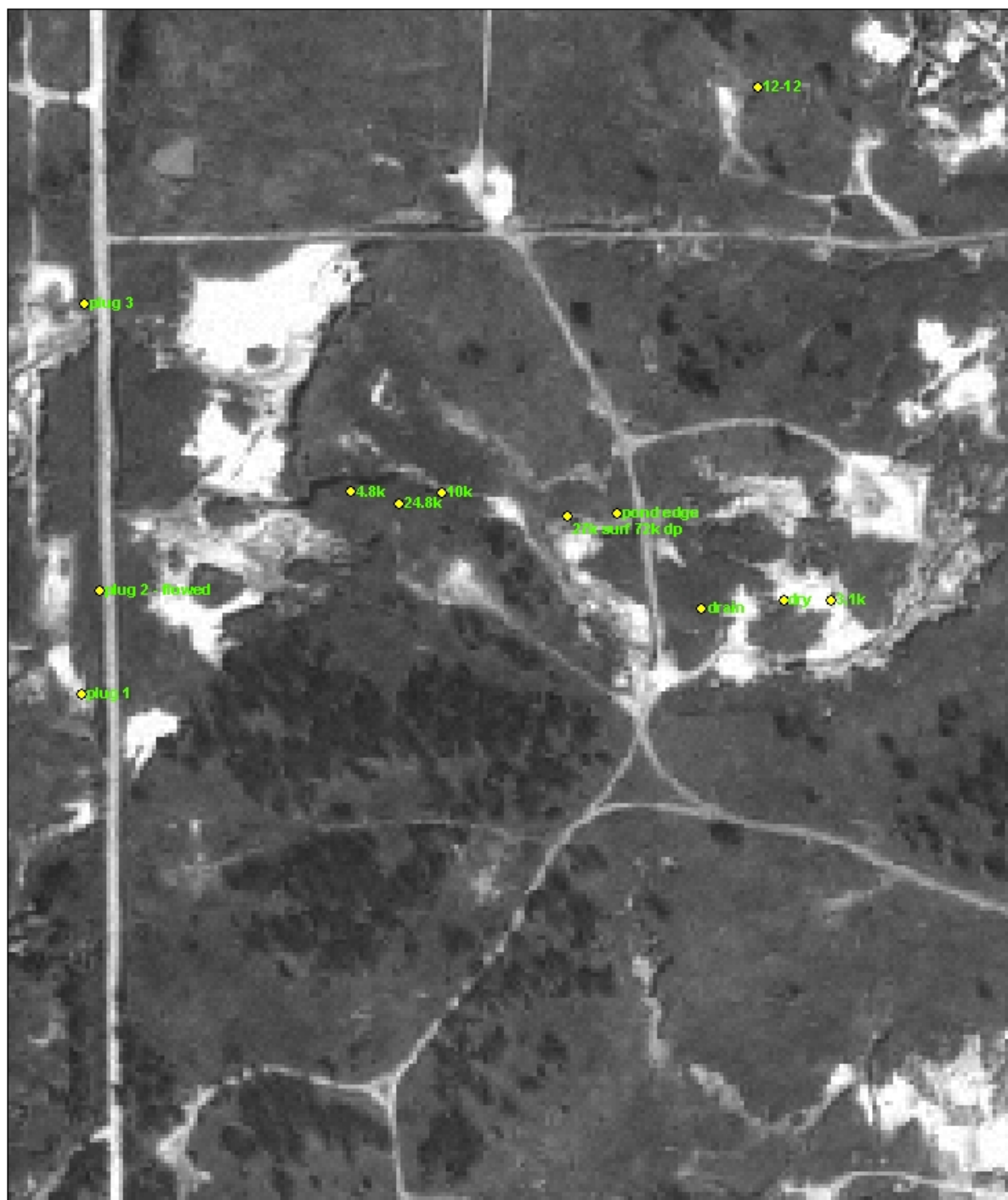


Photo 3 12:48 PM Stop 6: 15-4S-3W SE NW NW, retention ponds from road access



Photo 4 12:48 PM Stop 6: 15-4S-3W SE NW NW, retention ponds toward section road



Photo 5 12:50 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 6 12:58 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 7 12:58 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 8 12:59 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 9 1:08 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 10 1:08 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 11 1:09 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 12 1:10 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 13 1:12 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 14 1:15 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 15 1:15 PM Stop 6: 15-4S-3W SE NW NW, retention ponds



Photo 16 1:40 PM Stop 8: 15-4S-3W W NW NW, Healdton IV 12-11



Photo 17 2:01 PM Stop 9: Section 16-4S-3W state plugged wells



Photo 18 2:09 PM Stop 9: Section 16-4S-3W



Photo 19 2:09 PM Stop 9: Section 16-4S-3W



Photo 01 2:35 PM Stop 10 different catchment area



Carter Co, Oklahoma



Photo 02 2:35 PM Stop 10 different catchment area



Photo 03 2:52 PM Stop 11: disposal well at tank battery complex



Photo 04 2:53 PM Stop 11: disposal well at tank battery complex



Photo 05 2:55 PM Stop 11: disposal well at tank battery complex



Appendix G: Photos June 10, 2005

Photo 06 10:53 AM



Photo 07 11:06 AM



Photo 08 11:06 AM



Photo 9 11:21 AM



Photo 10 11:24 AM



Photo 11 12:06 PM



Photo 12 12:06 PM



Photo 13 12:06 PM



Photo 14 1:45 PM



Photo 15 1:45 PM



Photo 16 1:47 PM



Photo 17 1:55 PM





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

APR 30 2007

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2006 (FY06). On September 20, 2006, Ms. Nancy Dorsey visited Oklahoma Corporation Commission (OCC) offices and took part in discussions with Mr. Charles Lord about current UIC program implementation issues. Mr. Michael Vaughan of our Grants Section joined in by telephone. By e-mail on December 4th, 2006, we invited OCC's comments on the draft evaluation. This report considers OCC's comments received by e-mail on January 17, 2007. The FY06 evaluation is subdivided into sections:

- I. Introduction
- II. Grant Work Plan
- III. Program Revisions
- IV. UIC Oversight Issues

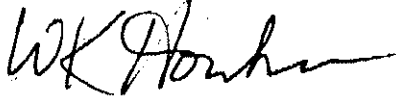
OCC's Annual UIC Narrative for FY06, (see Appendix B), lists the primary objectives of the UIC program during FY06. The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed requirements. Reports are important measures of OCC's compliance with UIC Safe Drinking Water Act (SDWA) standards, yet there was a significant delay in reporting the annual UIC narrative report, in part due to lack of a reminder from EPA. OCC's annual 'narrative' report is part of the UIC Grant Work plan commitments, (due on August 15, 2006 and received on November 17, 2006).

OCC's submission of requested UIC program revisions, SDWA 1425 for Class II injection from OCC, and joint SDWA 1422 from ODEQ and OCC for Class V wells, needs to be expedited. Past Region 6 End-of-Year reports document the on-going concerns related to this issue. The only agency action with respect to the 1425 program was a new rulemaking proposed by OCC, and subsequently enacted, but has not been submitted to EPA as part of the primacy program revision process.

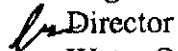
This year's report does not make particular recommendations, but does highlight areas of concern with the enforcement program. For example, 24 reports of brine or brackish water purging to surface were associated with injection wells or waterflood units, yet no UIC referral or enforcement actions were noted. Additionally, mandatory maximum mileage limits were imposed on all OCC staff, including inspectors. We are concerned this change weakens the OCC surveillance program, which already is stretched thin.

I remain confident that together we will address all significant UIC issues through the program revision process. Our common efforts must assure adequate protection from UIC activities for underground sources of drinking water as mandated by SDWA. If you have any questions on UIC program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Nancy Dorsey at (214) 665-2294, or Michael Vaughan at (214) 665-7313 about any UIC or grant related matters.

Sincerely yours,

A handwritten signature in black ink, appearing to read "WK Flores", written over a circular stamp.

Miguel I. Flores

A small handwritten signature in black ink, appearing to read "Miguel", written over a circular stamp.

Director
Water Quality Protection Division

Enclosure

cc: Charles Lord, OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2006 (FY06)
July 1, 2005 through June 30, 2006**

I. INTRODUCTION

The Oklahoma Corporation Commission (OCC) is the lead agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2005 and June 30, 2006.

On September 20, 2006, EPA Region 6 representatives met with OCC management for EOY evaluation discussions (see Appendix A for attendees). This report is subdivided into Grant Work Plan, Program Revisions and Oversight Issues. Appendix B contains OCC's annual narrative required in the FY06 UIC grant work plan. Appendix C is a copy of the series of letters between the EPA and OCC on the proposed Rule Making 200600012.

II. GRANT WORK PLAN

A. FY2006 Grant

The approved Federal FY06 allotment for the State of Oklahoma's UIC program administered by the OCC was \$296,300, and this amount was awarded to OCC in FY2006. OCC was also awarded \$68,482 in UIC special project funds in FY2006. These special project funds were used to purchase laptops and an echometer for use in the UIC program. OCC submitted an application for \$1,047,220 in federal funds.

Work plan Deliverables—Table 1 identifies State program updates and other deliverables required during FY06. This fiscal year OCC was again significantly delinquent on several deliverables: Some of the 7520 reports as noted in Table 1, and the annual UIC narrative report due August 15, 2006.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	1/31/06	2/07/06 fax
	4/30/06	6/08/06 fax
	7/30/06	7/31/06 fax
	10/30/06	11/10/06 fax
Grant Work plan/Application: FY06	5/01/05	5/12/05 draft
		9/08/05 final
Annual UIC Narrative Report	8/15/06*	11/17/2006
Final Financial Status	9/30/06	9/13/2006
UIC Well Inventory	10/30/06	11/02/06

* EPA did not send out a reminder on the latter report, until November 10, 2006.

B. UIC Program Activity Measures Reporting

OCC assisted Region 6 in compiling the UIC Measures Tables for Oklahoma, in a timely manner.

C. Special Projects

OCC has made good use of the special project funding, providing a laptop to each inspector and District supervisor connected with UIC. OCC is commended for compiling and preparing the information loaded on the laptops: well database from OCC files; prepared maps containing roads, streams, boundaries, USGS topography, surface geology; sequences of aerial photos; and other items. OCC permitted EPA to copy the dataset, which is greatly appreciated, as is the opportunity to discuss potential ways to improve the data and facilitate updating / maintaining it. During the Kingfisher geyser episode in late 2005, an inspector used the new laptop to e-mail headquarters vital information from the field.

As noted in Appendix B, the echometer "has already been responsible for withdrawal of two applications to dispose." The EPA is pleased that it is proving to be a valuable asset.

III. PROGRAM REVISIONS

There has been no action by either OCC or the EPA on the draft Section 1425 or 1422 program revisions. The following two sections are provided for background. Appendix C shows the communication held between OCC and the EPA on OCC's proposed Rule Making 200600012.

A. Update of Draft Section 1425 Program Revision

Since OCC's submission of a draft Class II UIC program revision package in December 1998, many issues first identified during the region's program review dated December 15, 1997, remain unresolved. The Region continues to seek interpretation and guidance from EPA headquarters on several permitting issues, including area of review requirements. Correspondingly, Region 6 responded to OCC's 1998 draft Class II UIC program revision package on April 8, 2004, with a request for additional information on water quality protection standards, area of review effectiveness criteria, financial assurance, and corrective action authorities. While preparing a response to EPA's request, OCC requested multiple deadline extensions including the latest via e-mail on April 14, 2005, offering the end of June 2005 as a qualified answer date. The topic was broached again at the EOY review on September 7, 2006. To date no written response or additional extension requests have been received.

Resolution of this longstanding issue is important. EPA requests OCC's Oil & Gas Conservation Division Director to expedite the submittal of a complete 1425 Program Revision.

B. Update of Draft Section 1422 Program Revision

In a draft joint program submission with ODEQ dated June 30, 2000, OCC seeks UIC Primacy authority for certain Class V activities: Reinjection of spent brine into the same formation following halogen removal; and aquifer remediation wells associated with leaking petroleum storage tanks. In 2002, at EPA's request, both Agencies submitted regulatory crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 sent comments to both agencies on May 28, 2002, and as of this report, EPA continues to await resubmission from Oklahoma's UIC Primacy agencies of an amended revision package for SDWA Section 1422 authority. Currently SDWA authorization of all Class V UIC activities lies with ODEQ, not OCC and will do so until EPA approves a revision to Oklahoma's applicable program pursuant to 40 CFR Part 145.

After renewed requests by EPA for both program revision packages, Mr. Tim Baker transmitted to Larry Wright in a letter dated August 5, 2005, OCC's proposed regulations for Class V wells under "jurisdiction" of OCC Oil and Gas Division "in response to Region 6 comments received in April, 2002." Those proposed regulations cite applicable Federal UIC regulations regarding applications for a "Class V underground injection well (a brine mining underground injection well)." The wells in question are spent brine return wells following halogen removal [Class V, by rule at 146.5(e)(14)] not Class III brine mining wells. In addition, the rulemaking does not address the Class V aquifer remediation wells associated with AST and UST cleanup operations under OCC Fuels Division authority, referring only to "brine mining"

wells, which are currently under ODEQ jurisdiction. Mr. Baker's transmittal letter indicates that the proposed regulations are in response to EPA's "April 2002" comments. Other issues regarding EPA's crosswalk comments remain to be addressed and resolved.

Resolution of this longstanding authority issue by a joint OCC and ODEQ 1422 final Class V revision package is very important. EPA requests OCC's Oil & Gas Conservation Division Director work with ODEQ's management to expedite the 1422 Program Revision process.

IV. UIC OVERSIGHT ISSUES

The five main parts of an effective 1425 program are (1) 'an effective permitting process which results in enforceable permits'; (2) 'whether the State applies certain minimum technical requirements to operators by permit or rule'; (3) 'an effective surveillance program to determine compliance with its requirements'; (4) 'has effective means to enforce against violators'; and (5) 'assures adequate participation by the public in the permit issuance process'.

OCC headquarters is commended for its responsiveness to EPA informal requests for information and action on wells with potential enforcement issues. The District offices are also commended for their responsiveness to EPA's questions and concerns.

A. Enforceable Permits

EPA has expressed concerns with some aspects of the OCC permit process over the last few years. These primarily focus on OCC's area of review process and financial surety requirements. These issues remain the same, as discussed in past reports.

Problems noted in previous years with OCC's tracking additional permit stipulations continue. Typical stipulations added to an injection permit are requirements to monitor nearby wells, and to run initial and/or periodic radioactive tracer surveys. There is no way to track this information in the master UIC database. There has been a place allocated for this information on the databases loaded to the laptops, but it has not yet been populated. This essentially prevents the field inspectors and headquarters staff from verifying if the stipulations have been followed, and whether or not the information has been received and/or was witnessed.

[OCC comment: This is a problem and the OCC is in the process of implementing RBDMS \(a database system\) which will make the permit stipulations available to office and field personnel.](#)

B. Minimum Technical Requirements to Operators

In previous years, the EPA reported a problem with operators not submitting information required on the permit application form—information needed to properly calculate the zone of endangering influence. The OCC regulations do not require the operator to provide it 'where the information is already in the State's files'. There is no verification that a check of state files is made for this information, rather the UIC permit specialist fills in a value from general knowledge or uses a default approximation. Specific permit applications were not reviewed as part of EPA's program evaluation this year. Instead, file reviews focused on District Offices as discussed below.

C. Effective Surveillance

In order to oversee the effectiveness of OCC's UIC surveillance, a file review of all District offices was undertaken, in addition to reviewing the mechanical integrity tests and UIC commercial facility inspection reports at OCC headquarters.

1. District Office Review

Each office maintains records according to their own system, all of which are sufficiently effective. The speed and methodology of handling complaints is also widely diverse—it was not possible to determine how or if all the relevant information is included in the federal 7520 Forms; or if violations are consistently addressed. This is due to including both active and closed files in the file system (active files may yet have an order filed or referral made), as well as uncertainty in whether all

information on enforcement action or referrals was recorded in the file. Specific issues covered here are instances noted in the files relating to illegal injection, UIC order violations, and purging to surface.

a) Illegal Disposal

Seventeen illegal disposal wells were written up in files at Districts I, III and IV. Eleven of these were sent straight to enforcement (District I); two were referred to UIC (Districts III and IV), only one of which was tracked to an order. Of the 12 orders, 10 collected fines. In two cases of illegal injection, one each in Districts III and IV, file notes did not indicate either referral to UIC, nor to any order. Many of these violation records did not show if the well was red-tagged (shut in). There were only eight unauthorized injection violations identified on the annual Form 7520, however this may be due to a different period of reporting for these forms.

b) Order Violation

Of the 21 UIC Order violations (failure to prevent pollution, exceeding permit pressure, and/or packer violations) identified in the District files, seven (all in District III) were noted as forwarded to UIC, and one of these was confirmed to have led to an order. Nine of the other violations were also tracked to orders. These violations do not include wells that failed an MIT, nor violations due to failure to file a form. There were no injection wells with either 'operation & maintenance' or 'other' violations identified on the annual Form 7520.

OCC Comment: The OCC does not report MIT failures as order violations.

c) Purging

In the FY2005 EOY, EPA recommended increased communication between the Pollution Abatement and UIC sections with respect to any occurrences of brine flow to surface that may potentially relate to UIC activities. OCC's response to the draft EOY was "Not all breakouts result in contamination of ground water. As previously discussed earlier this week breakouts are the result of brine taking the path of least resistance. If it has broken to surface, then it is not likely to contaminate ground water directly. I believe this is important and will take steps (reviewing 1085 complaint reports) to insure all 'cases of alleged contamination of a USDW' are reported."

As part of the recent file reviews at the District offices, notes were taken on 68 valid brine or brackish water surface purge investigations. Of these 24 either specifically mentioned an injection well in the area, or a unit designation—typically associated with a waterflood. In six cases, UIC influence was directly implicated as cause of the purge, yet no UIC enforcement action was taken, nor referrals to UIC noted.

OCC Comment: Again, RBDMS will centralize all UIC complaint data. This will coordinate actions between Field Operations, Pollution Abatement and UIC

2. Mechanical Integrity Tests

OCC continues to annually conduct and witness mechanical integrity tests for greater than 20% of the inventoried injection wells, as would be necessary to meet the five-year testing frequency for each well. For FY2006, OCC is again highly commended for witnessing all MITs. Oklahoma's Class II UIC operators generally comply with the MIT requirements of OAC 165:10-5-6. Figure 1, Class II Violations, includes Mechanical Integrity Violations (both failure to test on schedule, and failed tests with significant leaks) with a 5.1% failure rate for 2006. 2004 shows an OCC reporting problem.

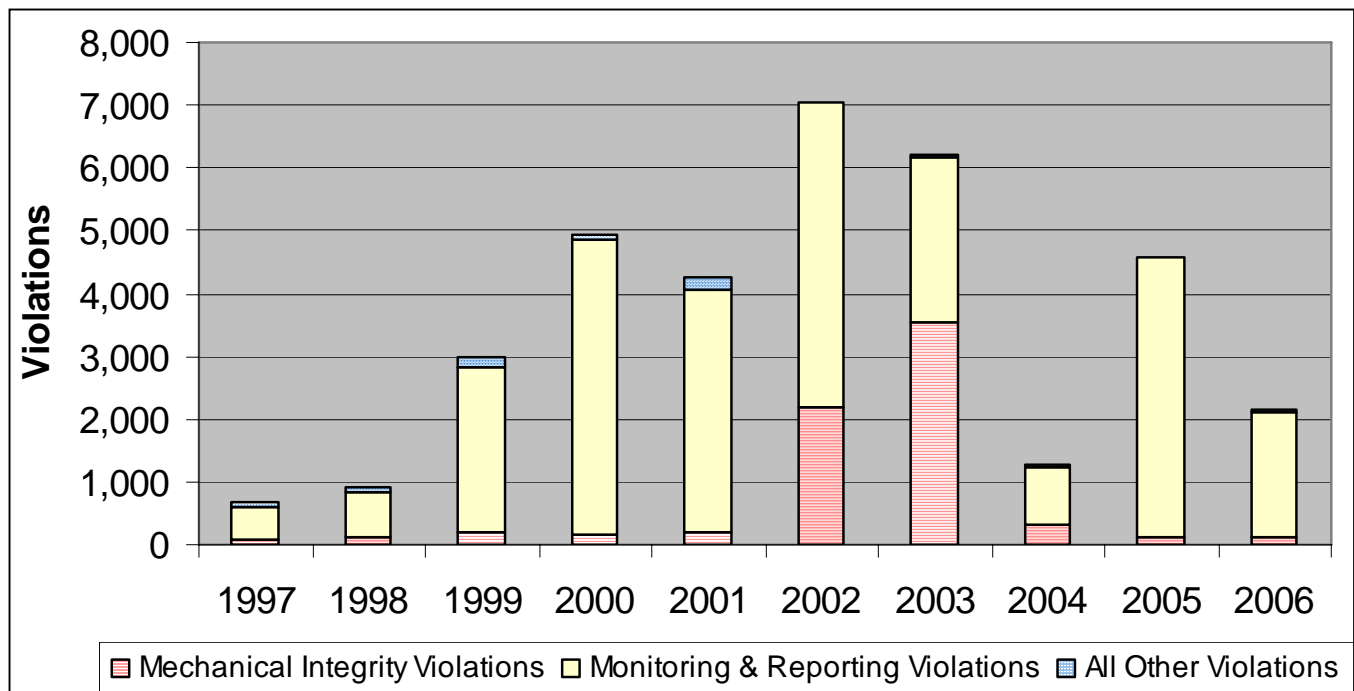


Figure 1: Class II Violations

A review of six percent of this year's MIT inspection reports, shows inconsistency between the various inspectors with respect to filling out the forms. Over 60% of the reviewed reports were missing the following information:

- Packer Depth per the Order and the Actual Packer Depth.
- Surface casing Pressure before test and the Maximum Pressure per the Order

50% or more of the reviewed reports were missing the following information:

- Annulus Pressure before test
- All packer information (all blank)

OCC Comment: RBDMS will have all test data available to the Field Inspectors and flag any cells on the 1075 form left blank.

These findings were discussed with OCC during a subsequent office visit (June 21, 2006). OCC is considering giving the inspectors a periodic refresher on filling out the MIT forms, covering such items as: what to look for, how to fill out the form, and for new MITs, the packer depth determination and method of determination. Difficulties with the various methods of determining packer depths without a wireline test were discussed. OCC asked whether other Region VI state agencies confirmed packer depths. The EPA posed this question and received the following responses:

- Texas Class I: requested to measure the annulus fluid flowback after a pressure test to calculate packer depth
- Texas Class II: Verifying the packer depth is not generally done in the Texas Class II program at this time. It is the exception rather than the rule. We are currently trying to implement that check using the fluid flowback volume method.
- Osage (EPA Direct Implement, Class II): flow back calculation required: measurements are done

- Louisiana all Classes: packer bleed off test is not a routine part of the testing and inspection procedure, but is used when there is suspicion that the packer may be set at a higher depth than permitted.

During the visit to the various Districts and working with the UIC database, a minor database problem was observed – less than three percent of the active well files do not have a date for the last MIT performed; however, during a spot check most of these had a terminated injection permit. This gave the incorrect impression that District II was not witnessing required MITs. This district is the only district to have a separate UIC reporting file.

OCC Comment: It is standard operating procedure for the Field Inspector to bleed off pressure after an MIT. This is done to detect a flap packer or blind swage nipple on wellhead.

3. Annual Fluid Injection Report (Form 1012A)

Monitoring and reporting is the primary Class II violation reported (Figure 1), despite OCC's continued effort to increase operator filing of Form 1012A, the annual monitoring report.

OCC Comment: UIC has changed the notification procedure concerning 1012A's. Announcements are sent to Operators informing them of the impending due date. Thirty days after due date, letters are sent to Operators informing them their injectors or disposal wells are out of compliance and the consequences of not filing. Forty-five days later UIC will request OCC's legal department file contempt. This will greatly reduce the percentage of reports outstanding.

4. Commercial Inspection Reports

While commercial injection surface facilities are not under the UIC program, pit monitor wells (MW) may give an indication of an injection problem as well as contamination from the pit itself. During the February 8th visit, 55 commercial facility inspection reports were reviewed. Of these, 31 had pits—with 3 undetermined as to whether or not a pit was present. According to 165:10-9-3(c)(6)(A), 'Any commercial disposal well pit shall be required to have a leachate collection system or a minimum of three monitor wells...' and under 165:10-9-3(d)(7), 'they shall be sampled once every six months, with prior notification to OCC.' Of the 31 to 34 facilities with pits, 25 had MW, six were indeterminate, and one was in the process of drilling the wells. With respect to sampling, only four were sampled, another four indeterminate, and 17 were not sampled.

This information was passed on to the Field Operations Manager, who planned to instruct the inspectors to make sure the monitor wells were properly inspected and sampled. An April inspection write-up referred a complaint to Pollution Abatement after high chlorides were detected in all three monitor wells.

OCC Comment: RBDMS will flag the lack of data on these wells for field and office personnel.

D. Effective Enforcement Means

In past years EPA has highlighted a concern over the lack of consistent penalties for UIC violations. In June, EPA conducted a survey of orders involving UIC matters using the OCC online Imaging page. The survey ran from case number EN 200500184 through EN 200600222. The results of the survey follow.

1. Resolution of Court Cases – Overall Time and Fines

The 97 orders pulled from the OCC imaging system were tracked through November 17th. One case (EN 200500273) appears to have been completely lost, with only the application in the records. Another case (EN 200600058) has had no action since two Motions were dismissed on 8/24/06. Eight more cases are working under a continuance. Of the remaining 87 cases, 24 were dismissed by request—with no fines or penalties collected nor indication of the state of compliance.

Fifty-seven were dismissed after fines were paid and the wells brought back into compliance before the court date. Of the remaining six with court levied fines, two had fines significantly reduced by the court from the requested amount (from \$5000 to \$2500 and \$50 respectively). The average length of time through the courts on finished cases was 67 days, with a maximum of 324 days. The average for the incomplete cases as of November 17th was 440 days with a maximum of 470.

The OCC is commended for appealing the Administrative Law Judge's (ALJ) decision to reduce a \$5000 fine for illegal injection to \$2000, (OGC200500078, District 1). The commissioners unanimously reversed the ALJ's decision. This case was not within the imaged files reviewed, it surfaced during the review at District I. Though it does bring to question why no protest was lodged in the other two cases discussed below:

EN 20050267 (Order 512116), the ALJ reduced the fine from \$5000 to \$50, despite the operator knowingly using the injection well illegally for over two years, "did not know that a permit was required until 2003" and "on July 27, 2005, that the Kerns #1 well was being used as a disposal well". It was reported that UIC appealed this case, but no record of an appeal was found in the imaging system. The operator was ordered "That payment of this fine is due within the time provided", but no time was stipulated—normally 30 days. (The fine was paid in 36 days.) In EN 200600131 (Order 527045), the ALJ reduced the fine from \$5000 to \$2500.

2. Resolution of Court Cases – Allegations and Fines

There is no correlation between cases dismissed without fines and the severity of the case, as illustrated in the Table below. UIC allegations not included in the table include failure to timely plug; failure to submit F1006B; injection 300' above approved zone; failure to notify about monitor wells and to plug them; failure to comply with Commission order; failure to notify OCC of violation.

Table 2: Finished Cases by Allegations & Fines

Fine Assessed	Fine Max Request	Max No. Counts	Failure to File F1012; F1002A or F1073i	For MIT, failure to: test, submit or notify	Unauthorized Injection	Failure maintain surety	Failure to not cause pollution	Exceed Max inj Pr	Pkr Wrong Depth /Verify depth
\$0		8	23	23	1	3	2	1	1
\$50	\$5,000	1	0	0	1				
\$500	\$500	3	44	14	1	2	1	1	
\$750	\$750	2	5	1					
\$1,000		2	4	2				1	2
\$1,250		3	3	2					
\$1,750		9	3	1		1	1		
\$2,500	\$5,000	1	0	0	2				
\$4,000	\$4,000	3	2	1					
\$5,000	\$5,000	2	0	0	3		1	1	
Total		34	84	44	8	6	5	4	3
% of Finished Cases			97%	51%	9%	7%	6%	5%	3%

For comparison purposes, the Form 7520 lists eight unauthorized injection cases, 124 MIT violations and 2,005 monitoring and reporting violations—a far greater number than found on the spot check of the imaging system.

3. Effective Enforcement Concerns

A primary concern for FY06 is the perceived lack of effective UIC enforcement. For whatever reason, there was a time period when no enforcement actions were authorized, and numerous cases were dismissed without fines or other actions, and without documenting a clear and compelling reason

for the action in the resulting order. In addition, the mandated maximum mileage limits imposed on all OCC staff, can only lead to additional problems with properly protecting the environment in accordance with OCC rules.

OCC Comment: The reason for this is that most enforcement actions are settled out of court. The record will not be opened to explain all the reasons for the settlement. This does not imply that an enforcement action was not taken.

E. Public Participation in Permit Process

Not specifically reviewed this year. In previous years, OCC permit reviews show a careful check that newspaper notifications are published on all new applications. During the review of orders this year, scans of hearing notices were plentiful in the online imaging system.

APPENDIX A
STATE/EPA Staff in Attendance
September 7, 2006
FY 2006 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Mike Vaughan	Environmental Protection Agency	(214) 665-7313

APPENDIX B
Oklahoma Corporation Commission
Underground Injection Control
Class II Wells
Year-end Narrative
Work-plan 2006

Oklahoma Corporation Commission implemented a highly successful Program in FY 06 meeting or exceeding established targets as determined in Work-plan 2006. The attached "Annual Report Card", depicts a summary of Activities.

Fiscal Year 2006 did result in one rule change in the UIC Program. This was the change of Packer Depth setting from plus or minus 20' to within 40' of packer setting depth in disposal order. We believe this to be a rational variance that will not effect protection of treatable water.

Program activities were good as on-site inspections of UIC facilities were at 12,320. Total UIC applications were up at 769 for the year, 287 Disposals and 439 Injectors. Totals for approved orders were 209 Disposals and 261 Injectors, total order dismissals numbered 202.

The Oklahoma Corporation Commission, Oil and Gas Conservation Division has committed to converting to the RBDMS database in 2007. We are hopeful that the RBDMS will greatly increase the speed of 7520 reporting. Also, RBDMS will make 1012A violations immediately apparent and assist in assuring compliance. Inputs from the field will make data available to more people much sooner than is currently possible. Flagging and cross-referencing of data and reports will make enforcement easier, quicker, and more certain. In addition the RBDMS GIS component may supersede the use of Arc Reader by the Field Inspectors for GIS function.

Field Operations is currently testing data collection in District II. Site inspections for all UIC facilities are reported on an excel form along with a GPS lat long. This will assist in Field Operations long-term goal of obtaining a GPS position on all UIC wells within five years.

In the area of GIS, UIC is continuing to update aerial photos as they become available. We are currently downloading 2006 aerial photos from the NAIP web site and hope to complete all 77 counties by March 2007. We are also continuing to expand our archival aerial photo library.

The EPA provided grant monies in 2006 for the purchase of an Echometer for the UIC Department. It has provided a means to check data supplied to us by Operators. It also gives us data from wells that no longer have a viable Operator or RP. This tool has already been responsible for withdrawal of two applications to dispose. EPA also finished out its commitment for grant monies for laptop computers for Field personnel. This has been extremely helpful in giving the Field Inspectors current UIC data, report and GIS function.

Annual Report Card
UIC Program Activities
Work-plan 2006
(7-1-05 Through 6-30-06)

November 15, 2006

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	12,320
MITs (total)	2,300	2,181
MITs (Witnessed)	2,300	2181
Permits (Total Issued)	NA	513
Technical Reviews	NA	769
Operatorship Transfers	NA	838
Technical conferences	NA	382

APPENDIX C

Hardcopy of the following letters:

- o February 17, 2006, Mr. Baker to Mr. Flores
- o March 27, 2006, Mr. Flores to Ms. Wrotenbery
- o May 3, 2006, Mr. Baker to Mr. Flores



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

Ms. Nancy Dorsey

OCT 17 2008

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2007 (FY07). On September 7, 2007, Ms. Nancy Dorsey visited Oklahoma Corporation Commission (OCC) offices and took part in discussions with Mr. Charles Lord and Mr. Tim Baker about current UIC program implementation. Mr. Michael Vaughan of our Grants Section joined in by telephone. By e-mail on September 2, 2008, we invited OCC's comments on the draft evaluation. This report considers OCC's comments received by e-mail on September 24, 2008.

OCC's Annual UIC Narrative for FY07, (see Appendix C), lists the key information about the UIC program for FY07. The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to far exceed minimum standards. Also, we continue to be impressed by OCC's effective and innovative use of special project funds. I would like to commend you and your staff for pursuing more effective means to track and address the source of purging brine water using electromagnetic (EM) field equipment. We look forward to seeing the fruits of the new survey equipment and the results of the Helicopter EM survey USGS conducted on your behalf.

In FY07, both OCC and EPA were involved with multiple complaints from a citizen in Carter County. From our observations during the investigation of these complaints, OCC's field staff performed high quality professional work. All of OCC's staff was responsive and helpful with our questions and suggestions. As indicated in our report dated June 12, 2007, our findings from the falloff testing and fluid level measurements indicate current injection is not causing the surface contamination seen today at the site of this complaint.

The program revisions addressing changes to your approved program and some issues we have with your program have yet to be addressed. We remain concerned with this unresolved matter. I will discuss this in greater detail in a separate letter.


I remain confident that together we will address all significant UIC issues through the program revision process. Our common efforts must assure adequate protection from UIC activities for underground sources of drinking water as mandated by the SDWA. If you have any questions on

UIC program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Nancy Dorsey at (214) 665-2294, or Michael Vaughan at (214) 665-7313 about any UIC or grant related matters.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Miguel I. Flores".

Miguel I. Flores

A small handwritten mark or signature.

Director

Water Quality Protection Division

Enclosure

cc: Charles Lord, OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2007 (FY07)
July 1, 2006 through June 30, 2007**

I. INTRODUCTION

This report is broken into five main sections: [Introduction](#), [Grant Work Plan](#), [Program Revisions](#), [UIC Oversight Issues](#), and [Recommendations](#)¹. Additional information is included in the appendices. A draft report was provided to OCC representatives for comment. Those comments are included in this report under headings of *OCC Comment*.

By EPA delegation, the Oklahoma Corporation Commission (OCC) is the lead agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2006 and June 30, 2007.

On September 7, 2007, EPA Region 6 representatives met with OCC management for EPA's annual end of year (EOY) evaluation (see [Appendix A](#) for attendees). [Appendix B](#) is a copy of the letters between the OCC and EPA discussing concerns with the 2006 End-of-Year. [Appendix C](#) contains OCC's annual narrative required in the FY07 UIC grant work plan. [Appendix D](#) covers a discussion between OCC and EPA on moving forward the SDWA 1422 and 1425 program revisions. [Appendix E](#) contains the 'Quality Oklahoma Team Day' write-up and awards. [Appendix F](#) contains some additional details from the oversight investigation related to OCC's internal tracking system.

II. GRANT WORK PLAN

A. FY2007 Grant

The approved Federal FY07 allotment for the State of Oklahoma's UIC program administered by the OCC was \$301,200, and this amount was awarded to OCC in FY2007. OCC was also awarded \$27,500 in UIC special project funds in FY2007. These special project funds were used to participate in a Helicopter Electromagnetic (HEM) survey over two swaths near the Arbuckle Mountains. OCC submitted an application for \$1,047,220 in federal funds.

Work plan Deliverables—Table 1 identifies State program updates and other deliverables required during FY07. This fiscal year OCC was slightly delinquent on several deliverables, though improved on others. Two quarterly reporting items under OCC's workplan were submitted past the deadline:

- Injection orders terminated by OCC on a quarterly basis as an attachment to Form 7520-4.
- Cases of UIC violations in which leakage or discharge into a USDW occurred.

¹ Underlined words are hyperlinked for easier electronic navigation. You can add a 'back button' by going to View: Toolbars: Web.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	1/31/07 4/30/07 7/30/07 10/31/07	2/20/07 fax 5/23/07 & 6/26/07 fax 8/03/07 fax 10/31/07 fax
Grant Work plan/Application: FY07	5/01/06	5/17/06 draft 7/10/06 final
Annual UIC Narrative Report	8/15/07	08/23/07 initial 08/31/07 final
Final Financial Status	9/30/07	09/21/07
UIC Well Inventory	10/30/07	12/21/07
EPA PAM* Reporting	Within 7 days of EPA request	within 1 day

* Program Activity Measures (PAM)

B. Special Projects

OCC is commended for its proactive stance on investigating reported brine contaminated water wells, with combined Pollution Abatement / UIC resources. OCC now involves UIC staff in any investigation of such reports that have the potential for an injection well connection. OCC also used EPA Special Project Funds to purchase new geophysical field equipment for investigating brine contamination.

A helicopter electromagnetic (HEM) survey was jointly funded through CWA section 104b and UIC grants in an effort to determine which current and historical sources of contamination, including injection well activity, are contributing to brine entering surface waters. The survey was possible only because the USGS was working with a consortium to study part of the Arbuckle aquifer, and the mobilization/demobilization costs of bringing the helicopter and equipment into the state were already covered. The USGS is working primarily through OCC's Pollution Abatement staff to finalize the interpretation of the area. OCC's UIC inspectors will provide ground truthing as their contribution to the effort. OCC plans to follow-up on any potential sources discovered through this survey.

Presentations of the initial data have been given to the EPA (EPA's 2007 Water Quality Monitoring & Assessment Seminar, May 2007); to OCC's Industry Advisory board (June 2007); to others in Oklahoma interested in similar problems (Bureau of Land Management, Association of Central Oklahoma Governments, and the Osage Nation, June & July 2007); and at the Ground Water Protection Council's annual meeting (September 2007).

EPA was pleased to learn that OCC's use of special project funds from FY05 and FY06 to provide laptops to the UIC inspectors, resulted in OCC winning the Oklahoma Governor's Commendation for "Transition to the 21'st Century", at the 'Quality Oklahoma Team Day' held on May 8, 2007. [Appendix E](#) provides a copy of the write-up on the project by Bob Griffith, and a picture of the awards. Based on positive feedback received from OCC's field inspectors, EPA has funded a similar laptop project in another state. The success of the OCC effort is largely due to several factors: getting up front input from inspectors on what information is loaded on the laptops, and providing easy to use GIS maps, phone cards (for transfer of data), and e-forms.

III. PROGRAM REVISIONS

A plan to move forward on the draft Section 1425 or 1422 program revisions packages was discussed during a joint conference call on July 11, 2007, (see [Appendix D](#)). However, delays in submitting required documentation continue. A brief discussion on the background of each the revision packages follows.

A. Update of Draft Section 1425 Program Revision

Since OCC's submission of a draft Class II UIC program revision package in December 1998, many issues first identified during the region's program review dated December 15, 1997, remain unresolved. Correspondingly, Region 6 responded to OCC's 1998 draft Class II UIC program revision package on April 8, 2004, with a request for additional information on water quality protection standards, area of review effectiveness criteria, financial assurance, and corrective action authorities. While preparing a response to EPA's request, OCC requested multiple deadline extensions including the latest via e-mail on April 14, 2005, offering the end of June 2005 as a qualified answer date. The topic was broached again at the EOY review on September 7, 2007.

Resolution of this longstanding issue is important. OCC's Oil & Gas Conservation Division Director requested Mr. Baker on her staff to review the initial draft response document and to provide EPA with a timeframe in which to expect their revised response. This was to have been within a month of the July 11th conference call, though EPA's letter confirming the conversation did not go out until August 10th. A formal response to the 1425 comments was received February 20th 2008.

B. Update of Draft Section 1422 Program Revision

In a draft joint program submission with ODEQ dated June 30, 2000, OCC seeks UIC Primacy authority for certain Class V activities: ReInjection of spent brine into the same formation following halogen removal; and aquifer remediation wells associated with leaking petroleum storage tanks. In 2002, at EPA's request, both Agencies submitted regulatory crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 sent comments to both agencies on May 28, 2002, and as of this report, EPA continues to await resubmission from Oklahoma's UIC Primacy agencies of an amended revision package for SDWA Section 1422 authority. Currently SDWA authorization of all Class V UIC activities lies with ODEQ, not OCC, and will remain so until EPA approves a revision to Oklahoma's applicable program pursuant to 40 CFR Part 145.

After renewed requests by EPA for both program revision packages, Mr. Tim Baker transmitted to Larry Wright in a letter dated August 5, 2005, OCC's proposed regulations for Class V wells under "jurisdiction" of OCC Oil and Gas Division "in response to Region 6 comments received in April, 2002." Those proposed regulations cite applicable Federal UIC regulations regarding applications for a "Class V underground injection well (a brine mining underground injection well)." The wells in question are spent brine return wells following halogen removal [Class V, by rule at 146.5(e)(14)] not Class III brine mining wells. In addition, the rulemaking does not address the Class V aquifer remediation wells associated with AST and UST cleanup operations under OCC Petroleum Storage Tank Division authority, referring only to "brine mining" wells, which are currently under ODEQ jurisdiction. Mr. Baker's transmittal letter indicates that the proposed regulations are in response to EPA's "April 2002" comments. Other issues regarding EPA's crosswalk comments remain to be addressed and resolved.

Resolution of this longstanding issue is important. OCC's Oil & Gas Conservation Division Director requested Mr. Baker on her staff to set up a joint meeting between OCC, ODEQ and EPA to establish a realistic timetable and goals. This was to have taken place within a few weeks of our July 11th 2007, conference call, though EPA's letter confirming the conversation did not go out until August 10th. OCC met with ODEQ on August 24th 2007, to discuss the 1422 status. Following that meeting at OCC's

request a copy of all related correspondence since 2002 was sent to them by the Region. On September 7th 2007, EPA met with OCC's Petroleum Storage Tank Division to discuss their participation in the program revision discussions. The meeting with all parties to discuss the 1422 revision was held December 12th 2007.

IV. UIC OVERSIGHT ISSUES

OCC headquarters is commended for its responsiveness to EPA's informal requests for information and action on wells with potential enforcement issues. The District offices are also commended for their responsiveness to EPA's questions and concerns.

EPA has expressed concerns with some aspects of the OCC permit process over the last few years. These primarily focus on OCC's area of review process, financial surety requirements, and permit stipulation tracking and follow-through. Typical permit stipulations added to an injection permit include requirements to monitor nearby wells, and to run initial and/or periodic radioactive tracer surveys. These are an important part of ensuring ground water protection. EPA concerns on these issues remain, as discussed in past reports.

With the continued high oil prices, the number of permit applications has increased (Figure 1).

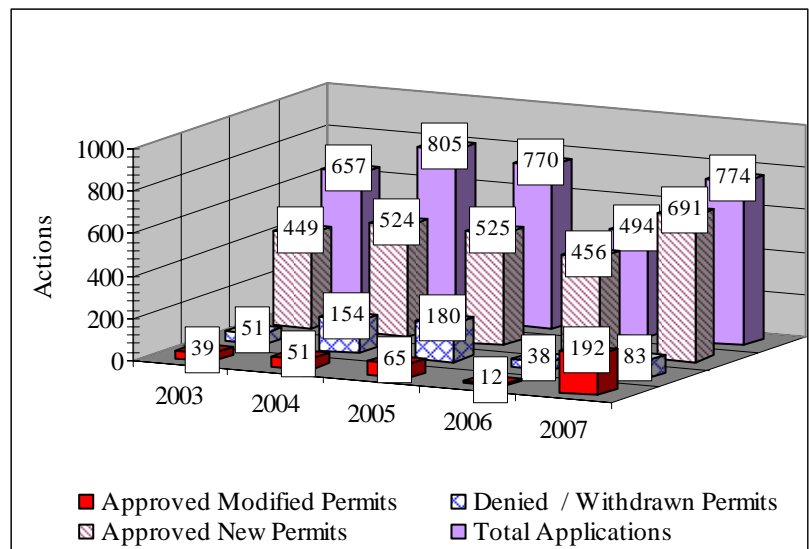


Figure 1: Class II Permitting

For a permit to be easily enforceable, the permit information needs to be readily accessible to the field inspectors. The current system using laptops provides the field inspectors with ready access to basic permit information on the GIS maps, and access to the internal OCC inspection tracking system.

A. Internal OCC Databases

During EPA's file review of June 12th and 13th, 2007, a computer was set-up with access to internal UIC databases and OCC's inspection reports. The following problems were identified during the review as shown through Order 429534 dated Jan. 14, 1999, for the Franklin Unit 8-9, API 019-30383 (for complete details see [Appendix F](#)):

- **Well Information**– The reporting of the Shut-in Static Fluid Level is ambiguous. For example, '0' can indicate an actual static fluid level or a null value meaning no data.
- **Redundant Information Reporting** – reporting information on two different forms can lead to a mismatch if one is updated and the other not. EPA recommends that the two databases be linked, unless the problem will be resolved by RBDMS.

- In the UIC Order Report System, there is a line that says “Passed Review”. When the input is “N”, meaning no, there should be a link to the follow-up action e.g., whether an MIT retest was required, continued investigation, or referral to enforcement.
- Order 429534, dated January 14, 1999, requires a tracer survey and an MIT every two years. According to the tracking system, one “Other test” for fluid was run on 5-19-1999; with the next test performed in five years, followed by another in two years.
- UIC Permits: Well Information
The link went to a well unconnected to the Order; however, if accessed from the Order Information screen, the problem did not occur.
- UIC Well Browse: Printout of screen information does not contain the well name.
The online Form 1012 summary only gives a total volume. The monthly rate and pressure would be more helpful for enforcement. This would improve correlation to the permit conditions.

B. Permit Application & Related Issues

The permit application and review process is fundamental to assuring the minimum technical program requirements are met. For oversight on this issue, every eleventh Pollution Docket permit application (PD200600315–601 & PD200700011-330: 57 applications) posted on the OCC Imaging site was reviewed, plus some additional permits in special investigation areas (14 applications). Initial findings were sent to OCC (e-mail 8/31/2007) along with questions relating to particular permit issues. These are discussed later in this section. Overall OCC’s process is working; potential problems are being identified, and additional information and/or mitigating actions, such as permit stipulations or cement bond logs, are being included in the permits. EPA did identify some recommendations outlined below.

Of the initial equal distribution permits², fifty-one are included in the following analysis³:

- * 6.4% of the 795 total applications received for the year were reviewed
- * 4 Commercial salt water disposal (SWD); 20 non-commercial; 27 enhanced oil recovery:
 - * 14 still pending or waiting to be scanned (as of September 11th, 2007), and
 - * 37 finalized injection permit Orders; (6.6% of the 549 total approved applications were reviewed)
- * 5 Emergency order applications were included in the above wells; 4 granted & 1 dismissed

Of the thirtyseven permits granted, the time between application and approval ran from a record 19 days up to 285. The median time was 63 days to grant a permit, though some applications still waiting in the queue have been there a median time of 179 days, up to 463 days as of October 30th, 2007. Of those waiting the longest, three are waiting on the operator for some action, and the fourth has a problem well.

1. Permit Concerns

Permit PD200600601 revealed the greatest concern, although it is an unusual case. The operator received an emergency (534632, contains a regulation reference typo) and two final permit orders granted (536282 on 3/5/07 & 536592 on 3/12/07). The first was clearly designated for non-commercial disposal, which matched the application filed. The second was headed non-commercial, but clearly stated it was for a commercial disposal well. Based on discussions with OCC

² Every 11 permit applications were reviewed.

³ The other applications were either permit numbers not used, not UIC, or dismissed by operator request.

representatives, the second order resulted from the applicant's attorney applying for a hearing and submitted Form 1015, the standard application. The redundant application should have been dismissed. The tubing and packer depths are also different. The first order has correct information. Order 536592, the second order, was vacated on 9/26/07. It is not clear why these two application processes are treated differently.

- PD200600601; Emergency Order 534632: 1/24/07 – 04/14/07; Final Order(s) 536282: 3/5/07 & 536592: 3/12/07. Order 536592 vacated 9/26/07.

OCC Comment: Orders 534632, 536282, and 536592 all agree as to packer setting depth at 7,062'.

We have nothing in our rules that prohibit two applications from being filed. However, only one can be the controlling document, the last order signed.

2. Permit/Program Ambiguity

Regarding well classification, OCC rules state:

165:10-5-1. Classification of injection wells: Injection wells shall be classified as follows:

(1) Enhanced recovery injection well. An enhanced recovery injection well is a well which injects fluids to increase the recovery of hydrocarbons.

(2) Disposal well. A disposal well is a well which injects, for purposes other than enhanced recovery, those fluids brought to the surface in connection with oil or natural gas production.

4) Simultaneous injection well. A well that injects or disposes of salt water at the same time it is producing oil and/or gas to the surface.

EPA has several questions with regard to permitting as follows. What is the OCC legal opinion on what the operator is allowed to inject, when the permit order for an EOR well stipulates injection of "Water and CO₂" (537549, 538335, 543181, plus others⁴); "Water, Enhanced Fluids and CO₂" (532598⁵); or "Water and gas injection" (541092)? Does the lack of a definition for enhanced fluids, within OCC regulations, allow an operator to use their own interpretation of the permit injection fluid?

OCC Comment: *The application requires a sample analysis of the fluid to be injected. Typically, if the operator is electing to use natural gas or CO₂ that will be taken into account during the permitting process. UIC's primary concern is if the injection operation will threaten any underground sources of drinking water. The important aspect is that the UIC Department will conduct the ¼ mile area of review irregardless of the injection media. The lack of a definition has not been a issue.*

Discussions with OCC indicate that in some instances fresh water is allowed as make-up water, but that fresh water supply wells are permitted by the Water Resources Board (OWRB). Is there any communication between OCC and the OWRB when fresh water has been explicitly approved as an injection source?

OCC Comment: *Yes, If the OCC issues a permit for the use of fresh water as an enhance recovery fluid, the operator is still required to obtain a permit from the OWRB (through a public hearing process) in order to be allocated a certain amount of fresh water for E.O.R operations.*

On a similar note, enhanced recovery permits used to contain language indicating that the injection permit was only valid so long as (specific) wells in the waterflood continued to be produced.

⁴ The operator requested to be able to inject fresh water, make-up water and CO₂.

⁵ The application requested lease produced water and CO₂.

Where this language has been omitted, do the injection permits terminate on the cessation of production? For example, orders: 532849 and 541092 (amended 397117).

OCC Comment: No, OCC 165:10-5-9. (a) states “Subject to 165:10-5-10, order authorizing injection into enhanced recovery injection wells and disposal wells shall remain valid for the life of the well unless revoked by the Commission for just cause ...”. If a specific well has been required to produce as part of the UIC requirement within the order, if that particular well ceased to produce then it would be interpreted as just cause to vacate the order.

When the permit has special stipulations such, ‘An initial tracer will be run, and the well tested every two years.’ Would that mean that the tracer is also run every two years, or only initially?

3. Application Issues

In previous years, the EPA reported a problem with operators not submitting information required on the permit application form, specifically information needed to properly calculate the zone of endangering influence (ZEI). The OCC regulations contain several avenues whereby the applicant doesn’t have to provide part or all of the information. For example, one form states the information is to be provided ‘if available, to the applicant’⁶. This year showed a marked increase in the number of operators reporting key information. However, 56% of applicants did not report any current pressure information (vacuum, reservoir pressure or depth to fluid level), 27% did not report porosity, and 46% did not report permeability. Some of the applications still are not clear as to whether the value entered on the application is the static fluid level or the formation pressure since units are rarely included (PD 200600513). In some cases (no problem wells within the ¼ mile), the provided information was not used in the ZEI/AOR calculations (PD200700088, 200700066). In other cases there was no concern when the operator reported that the fluid level was at the ‘surface’ (PD200600308, 200600359), since there were no problem wells within the ¼ mile AOR.

OCC’s AOR evaluation process remains a concern with EPA, for reasons described in previous reports. AOR calculations are done for all permits, whether applicable or not⁷. Although the information is only used if there are problem wells identified within the ¼ mile radius (1320’). For the record, 62% of the approved permits reviewed had an AOR calculated as greater than ¼ mile, as shown in Figure 2.

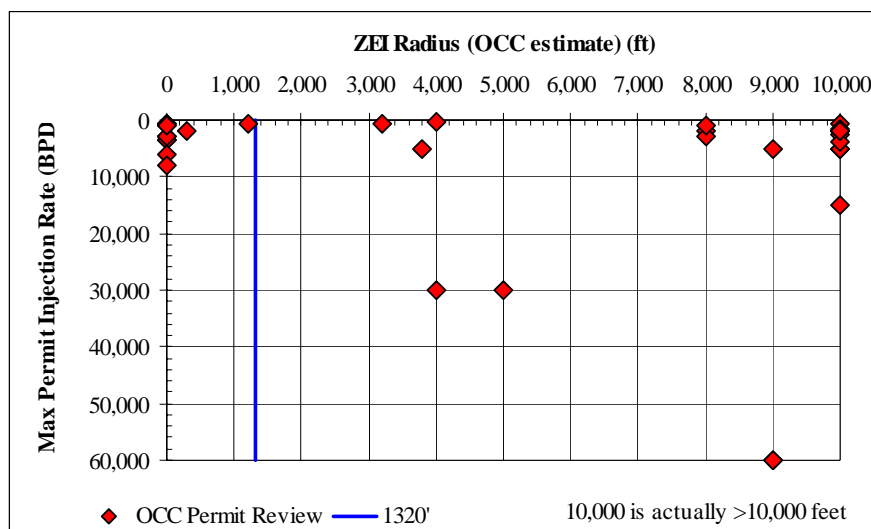


Figure 2: ZEI Distance versus Base Treatable Water

OCC Comment: The Oklahoma Corporation Commission (OCC) does not use the zone of endangering influence (ZEI) calculation to approve Class II well permits. The OCC uses the ¼ mile

⁶ 165:10-5-5(b)(2) A list of the following information, if available, to the applicant: ...

⁷ The calculation form is not applicable to gas injection.

area of review (AOR). If a mud plugged well or an off-setting well that does not have the geologic zone adequately cemented across the zone intended to be used for disposal or injection within a ¼ mile of the subject well then the ZEI calculation may be relevant. At that time porosity, permeability, and reservoir information is necessary information. If the fluid level is at the surface or if there is a shut in positive pressure on the subject well, the calculation of the ZEI is meaningless due to the fact the calculation will show the ZEI to be infinite. The ZEI has shown to be a useful tool for calculations within the ¼ mile AOR. Out side the ¼ mile AOR the validity of the equation is highly questionable. In the Region VI meeting in 2003 with the Class II well program states this very issue was discussed. At the conclusion of the meeting, all of the states were found to be using the fixed AOR and none of the states were encountering problems with contaminating USDWs as a result of using this permitting procedure. Therefore, the statement of 62% of the approved permits had an AOR calculated greater than ¼ of a mile is based upon values in the equation that were assumed values and not meaningful information and therefore it is not statistic of any relevance.

In a number of cases (see Figure 3), the requested maximum injection pressure compared to the top of the injection interval had the potential to be above formation fracture pressure. OCC generally requested the applicants to run step-rate tests, in order to properly evaluate the applications for fracture pressure identification. All of the permits were granted. EPA does not agree with the OCC's interpretation of the step-rate tests in all cases, and has discussed this with them. Based on a combination of the quality of step-rate tests found in the permit records, the difference in interpretations between OCC and EPA, and EPA's investigation at the Healdton IV oil field, (discussed later), EPA and OCC discussed the issue of step-rate tests. At OCC's request EPA prepared a suggested set of guidelines for running and interpreting step-rate tests for formation fracture analysis.

OCC has taken action to address past EPA concerns over the practice of approving Emergency Orders without apparent review. EPA found documentation in the imaging system that concerns were addressed prior to approval of several Emergency Orders. Additional discussions with OCC, confirmed that prior to granting any emergency application, a search for problem wells within the AOR is completed. It was interesting to note that all of the reviewed emergency permit applications

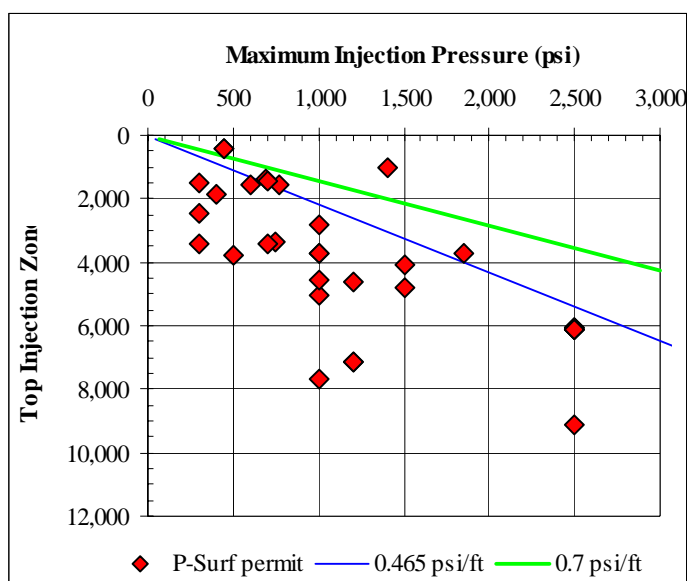


Figure 3: Max Injection Pressure versus Depth

Orders 532428: 11/20/06 - 12/20/06; Emergency Order 533937: 1/3/07 – 1/20/07; Final Order 535750: 2/21/07.

were applied for either the same day as the regular application was filed or within 15 days of it. Of greater concern are gaps between the end of the Emergency Order(s) and the start of the next injection authorization. OCC procedure regarding such emergency orders are that only two are permitted, and there is no disposal permitted without an order, though no action was taken for the observed gaps in authorization. This procedural problem results in unauthorized injection in many cases as illustrated by the following examples:

- PD200600447; Emergency Order 530191: 9/22/06 - 12/19/06; Final Order 537115: 2/22/07.

- PD200600502; Emergency

OCC Comment: All emergency order applications have an AOR performed. Policy is that if a problem well is found, then we can only approve the emergency order at 0 psi. injection pressure.

Some permit orders had different information in the order than was supplied in the application: PD200600425: injection interval; PD200700022: BTW depth, issued nunc-pro-tunc order correction (544350 on 9/17/07); and PD200700231: requested an amended EOR permit, but was granted an order that did not specify whether the order was for an EOR or noncommercial disposal well.

PD200700110 was granted a permit 19 days after the application was received. The last public notice was published 13 days before the order, thus not meeting the 15 day public notice period.

OCC Comment: PD 200700110 did not, in fact meet the 15 day notice period. Fortunately, UIC did not receive a protest on this well. If we had, we would have vacated the order and scheduled a protest hearing. This is a very rare occurrence and will be addressed in RBDMS.

The ALJ conducting the protest hearing on PD200600594 is commended for sensitive handling of the situation. Although aired concerns were outside OCC jurisdiction, the judge allowed all comments to be heard.

4. Difference of Regulation Interpretation

Several areas discussed with OCC during oversight review relate to areas that need clarification in the OCC regulations, including minimum surface casing requirements for older, converted wells; water well samples for amended permits; and public notice requirements. These will be brought into the 1425 revision package discussions.

a) Minimum Surface Casing Requirements

165:10-3-4 (c)(1) Minimum surface casing requirements. Unless an alternate casing program is authorized by the Conservation Division or by an order of the Commission, suitable and sufficient surface casing shall be run and cemented from bottom to top with a minimum setting depth which is the greater of:

(A) Ninety feet below the surface, or

(B) Fifty feet below the base of treatable water.

165:10-3-4 (c)(3) Operators having wells producing hydrocarbons which were in compliance with the surface casing requirements at the time of completion shall not be required to comply with (1) of this subsection.

165:10-3-4 (l) If a well is converted for use as an injection or disposal well, it shall be subject to the casing and cementing requirements of this Section effective at the time of conversion of the well.

Seventeen of the applications required the reviewer to address the issue of either insufficient surface casing or cement below the Base Treatable Water (BTW). Generally, these required cement run from surface to the base of the next deeper production or casing string. For old producing wells an alternative, if not resolved prior to the order, was to require a Cement Bond Log as part of the Order. In the instances below, the information resolving this issue was not found in the files:

- PD 200600458: casing 29' below BTW, conversion of old production well.
- PD 200600502: casing 21' below BTW, conversion of old production well.

b) Water Well Samples for Amended Permits

165:5-7-27(b)(5)(C) Qualitative and quantitative analysis of fresh water from two (2) or more fresh water wells within one (1) mile of the proposed enhanced recovery injection or disposal well showing location of wells and dates samples were taken, or statement why samples were not submitted. The analysis shall include at a minimum chloride, sodium, and total dissolved solids.

165:5-7-30 (a) Each application for an amendment to an existing order shall be filed on Form 1015A and comply with the requirements of 165:5 7 27(a) and (b).

Of the amended application permits, two contained either sample results from fresh water wells or a certified letter, and four contained neither, (PD200600359, 200700044, 165 and 231).

Very few applications provide a map or descriptive location of the sampled water wells. Applicants should include a map showing the exact locations of all sampled wells.

5. Public Notice

165:5 7 27(d) Notice of an application relating to injection, disposal or commercial wells shall be ... in a newspaper of general circulation published in Oklahoma City, Oklahoma, and in a newspaper of general circulation published in each county in which land embraced in the application are located.

Form 1015 - Application for Administrative Approval to Dispose of or Inject Water into Well(s): ... shall file proof of publication in an Oklahoma City newspaper and a county newspaper in which the well is located.

OCC reviewers currently interpret this as wells in Oklahoma County only need one notice of publication. Although EPA does not consider this a major issue, clarification should be added in a future program revision.

C. Effective Surveillance & Enforcement

Effective surveillance results from effective routine investigations (See Figure 4⁸) and response to citizen's complaints. OCC witnesses all MITs, far exceeding the EPA minimum recommended standard of 25%. OCC's annual program narrative lists the inspections conducted during the fiscal year. The reason for the drop in the total number of inspections this year is because injectors are being located using Global Positioning System readings.

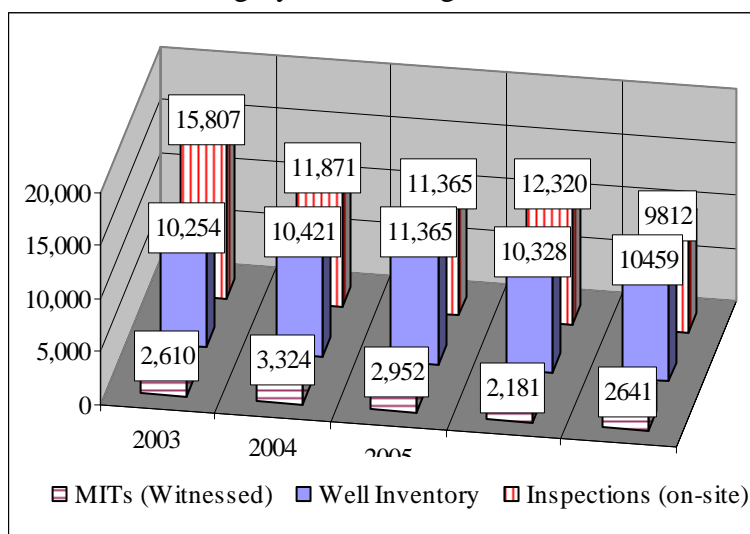


Figure 4: OCC Activities

1. Complaint Response

OCC's EPA reporting Form 7520 (Complaint/Emergency Response Inspections) shows no inspections related to citizens' complaints since 2003, when in fact many have been conducted. OCC should work with inspectors and/or reporting staff to assure these important inspections are properly tracked and reported.

OCC Comment: Field Inspectors responding to a complaint are conducting an investigation, not an inspection.

⁸ From OCC Narrative, state fiscal year.

In response to an August 30, 2006, citizen's complaint from Mark Hammons, Region 6 UIC staff initiated an investigation into the Healdton IV unit, located in Carter County, Oklahoma. This investigative study had several different aspects including field visits, fluid level and step rate test analyses, evaluations of operational data and aerial photography interpretation. EPA's initial conclusions were provided to OCC in a letter to Ms. Wrotenbery on March 8, 2007. Since that time, at OCC's request, Citation Oil and Gas Corporation worked with EPA staff to conduct a step-rate and fall-off test of the Healdton IV Unit 22-8 well on May 30-31, 2007. EPA's analysis of the test results concludes that the current injection operations are not fracturing the reservoir or endangering underground sources of drinking water, (letter to Mr. Lord on 06/28/07). This combined with the low reservoir pressure supports the conclusion that Citation's permitted injection operations are not contributing to the saline seeps in the area.

OCC has instituted a new procedure, whereby UIC personnel will assist Pollution Abatement in investigating any brine contamination of water wells that are reported, and have a possible UIC component. EPA supports this collaboration as a good step toward improving internal communications and identification of problem areas that could be the result of injection wells (e.g., without mechanical integrity, over-injection, unauthorized injection, and/or unknown improperly plugged wells).

EPA suggests that OCC field inspectors provide the GPS locations of any verified brackish water or brine purges to surface they encounter to the UIC office in Oklahoma City. This information could then be assessed through technical or permit application reviews. OCC indicated that all permit applications are provided to the District Managers. The Districts are forthright in providing useful information relating to applications, particularly shedding light on potential problems.

2. Mechanical Integrity Tests

OCC continues to annually conduct and witness (see Figure 4) mechanical integrity tests for far greater than 20% of the inventoried injection wells, as required to meet the maximum five-year testing frequency for each well. OCC is again highly commended for witnessing all MITs. Figure 5⁹, shows the number of well inspections, tests run and witnessed, and the test failures with associated violations. MIT failures include both not testing on schedule and tests with significant leaks, but exclude those wells that subsequently passed the MIT. Oklahoma's Class II UIC operators generally comply with the MIT requirements OAC 165:10-5-6. Most operators with MIT violations only receive a notice of violation, so long as the problem is quickly resolved. In February 2007 OCC implemented a new automated system to assist the MIT compliance program:

- If a well fails its MIT, and is not repaired and successfully retested within 30 days, then
 - OCC sends a notice of violation; if no action within another 30 days then
 - a final notice is sent by OCC legal staff; if no action within another 30 days then

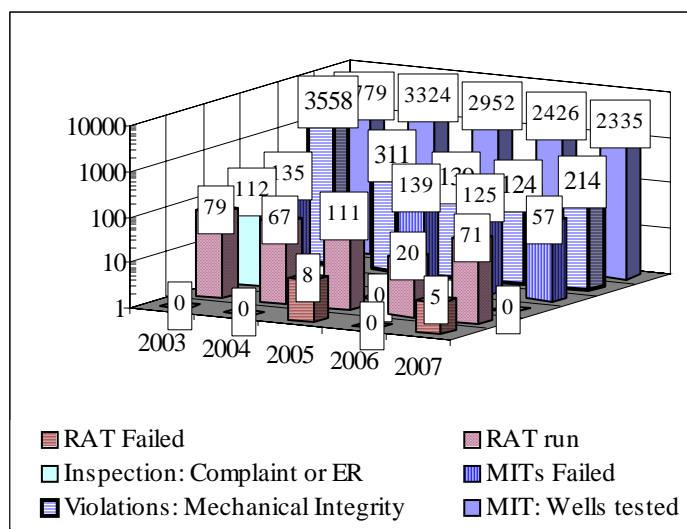


Figure 5: Well Inspections, Tests, & Failures

⁹ 7520s, EPA Fiscal Year

- OCC files contempt.

3. Enforcement Actions

Figure 6 shows the number of enforcement actions reported in the 7520s, (2004 reflects OCC reporting errors.) Enforcement orders and consent agreements have decreased drastically within the last two years. EPA was unable to determine the cause of the decreasing number of enforcement actions, but is concerned, not only with this trend, but with the magnitude of the decrease. EPA requests OCC to provide an explanation of this sudden shift.

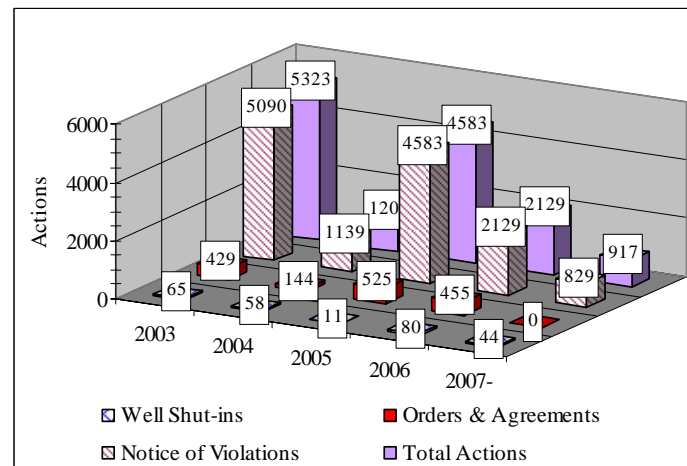


Figure 6: Enforcement Actions per 7520-2A

OCC Comment: *This is a trend starting in 2006 and declining even more in 2007. This can be viewed from two angles,*

1. *Fewer notices mean decreasing enforcement.*

Data has been collected in the same manner in 2005, 2006, 2007. We send notice of violations to all operators delinquent in filing 1012a's, or taking action on late or failed MIT's.

2. *Fewer notices mean increased compliance.*

Increases in the price of oil means Operators sustain larger losses for days out of production. Operators have been more proactive in complying with commission regulations as a result.

Increased compliance is the reason for a drop in notices in 2006 and 2007.

4. Special Permit Conditions

Special permit conditions (stipulations) are not tracked. OCC plans to load the images of all active permit Orders on to the field inspector's laptops to enable them to verify if any special requirements have been followed. Considering the amount of work it would take to pull out the old data this is a viable work around—though a (small) number of the orders will need to be rescanned. Some of them, such as Order 304989 have a large portion of text blacked out.

OCC has agreed to include stipulations as a data element for the new Risk Based Data Management System (RBDMS) database, which is still in the planning phase. However, there will be no way to fill any eventual RBDMS entry with this information, unless its collection is initiated. It is recommended that OCC start collecting the information on a point forward, and/or special project basis.

OCC Comment: *EPA has approved a grant to the OCC for entering order stipulations in our database. In addition, the entering of stipulations will be part of RBDMS.*

Order 429534, granted on 1/14/1999, required an initial radioactive tracer survey. The well successfully passed an MIT on 5/20/1999 with no additional tests documented. OCC should assure this testing is conducted and appropriately documented in the records.

OCC Comment: *A. Order 429534 Franklin unit #8-9. This well was in fact not tested every two years until 2004. The first two tests were on five year intervals.*

RBDMS will address problems in A, along with our order stipulation grant.

5. Other Suggested Tracking Improvements

Including the 'Incident number' as a searchable record on the Image files for enforcement orders, would enable follow-through on what was done. For example, checking if the following records on the internal system under, 'Unresolved Complaints by Field Inspector' are actually still unresolved:

- Incident number 18503OGDO41783: Received 1-2-2003; "Saltwater Disposal being used illegally"; Kleinde SW Disposal #2; Confirmed Pollution : Yes
- Incident number 18503OGDO43353: Received 6-3-2003; "Well abandoned. Well purging oil and saltwater. Well not plugged."; Confirmed Pollution: Yes.
- Incident number 18507OGDO42975: Received 5-4-2007; "Permit Violation (165:10-5-2,A)"; Confirmed Pollution: Yes.
- Incident number 18507OGDO42436: Received 4-2-2007; "Saltwater leaking at well and running into pasture. Surface damage at tank battery from previous leaks contaminated"; Confirmed pollution: yes.

An additional tracking suggestion that could assist UIC enforcement is to develop the ability to cross-reference between the operators in the Tax Commission's production database with both the current UIC permit holders and commercial disposal logs.

6. Injection Well Ownership Transfers

Records reviewed by EPA indicated that there have been a number of instances where operators transfer their producing wells over a year before transferring their injection wells. This raises the possibility that the new operator is injecting produced brine without a permit. OCC considers the original permitted operator to be responsible until either there is a transfer or the surety expires. EPA recommends OCC consider comparing Form 1073 transfers (production wells) to Form 1073i (injection wells) transfers.

The most recent questionable example, is the Taliaferro A-6: Order 65313, Estate of Patsy Pierce operating' dba Pierce Operations, 18062-0. The new operator is DalCor Energy LLC, 22074-0.

- A comment at the bottom of the 2006 Form 1012A filed on 3/13/2007, states "Pulled tubing and packer Nov. 17th to replace joint with hole in it. Dress packer and ran in. Reset and pressured up on tubing string to 400 psi---0 psi on casing. Well will be MIT'd in March of 2007, when operator/company name changes."
 - OCC Enforcement reported that a violation was filed on June 21, 2007 for failure to report the tubing leak and to rerun the MIT in a timely manner. There is no record of an enforcement action.
- During EPA's site visit on May 31, 2007, all the signs on the oil storage tanks (totally without berms); the separator facility and tank (with small berm); and the lease signs for the Taliaferro A and E clearly stated the operator as DalCor Energy. The injection well had no signs.
- OCC Incident and Complaint Investigation Report No. 18507OGDO33062 cites DalCor Energy LLC at the Taliaferro E lease, on May 31, 2007.
- Form 1073I filed 7/18/2007.

Operators failing to change their injection wells to the new owner are not an uncommon occurrence. Is there anything OCC can do to encourage timely reporting?

OCC Comment: OCC will be combining the UIC and OG databases when implementing our RBDMS data base. We will soon transfer all wells on one 1073 form.

7. Annual Fluid Injection Report (Form 1012A)

By April 1 of each year, injection well operators are required to file an annual report (Form F1012A) indicating the average monthly pressure and injection rate for all their wells for the past year. Around 2005, OCC instituted a procedure to increase operator compliance with this rule. Announcements to the operators informing them of the impending due date, are followed by letters thirty days after the due date, informing them their injectors or disposal wells are out of compliance and the consequences of not filing. Forty-five days later UIC requests their legal department to file contempt for operators still out of compliance. Figure 7 shows the reporting track record¹⁰ for the last five years. OCC is commended for its actions to increase compliance rates. EPA will continue to monitor this issue.

During the Healdton IV investigation, Form 1012As from the operator of this field were reviewed covering the last few years. A number of problems were noted: incorrect UIC permits, wrong locations; and periodic injection rates or pressures over the maximum authorized¹¹ with no apparent enforcement.

OCC Comment: RBDMS will flag any discrepancy's between permitted volumes, pressures, and orders.

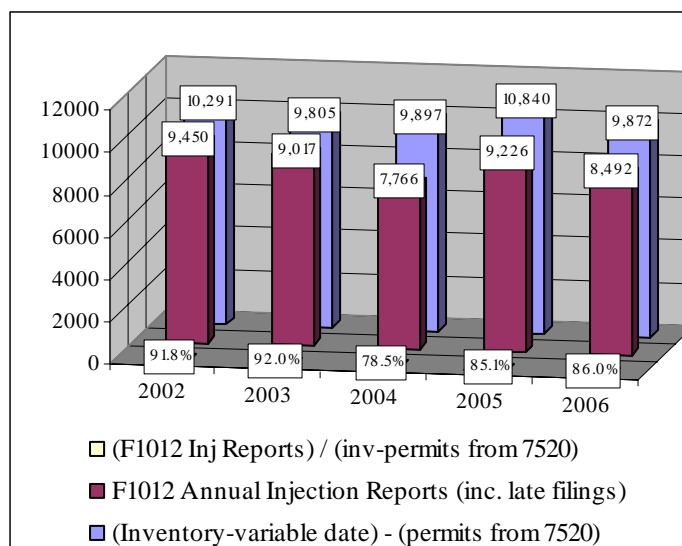


Figure 7: F1012 Reports Vs Adjusted

V. SUMMARY AND RECOMMENDATIONS

OCC is commended for witnessing all mechanical integrity tests, far exceeding the EPA minimum recommended standard of 25%. OCC maintains open and responsive communication with EPA on all issues related to the UIC program. Staff participation and support to EPA's assessment of citizens' complaints continues to be positive and helpful. OCC has taken positive steps to improve some program areas over the past few years. Specifically, EPA is impressed with OCC's use of special project funding to target improved technology in specific program areas for increased effectiveness.

EPA recommends that OCC continue to pursue complete implementation of the Risk Based Data Management System. Also, OCC should continue to pursue a program revision incorporating all changes/updates to its UIC program. One broad area of concern is the change from standardized formats for applications and permits to generic editable documents in Microsoft Word. Changes and omissions via edits by operators or OCC staff were noted in several cases resulting in errors. OCC should use uneditable electronic formats or improve its quality control on processing orders to assure all appropriate requirements are incorporated.

¹⁰ New permits are deleted from the year's inventory, as the operator is not required to file for a well the year its permit is granted.

¹¹ OCC sent a letter to the operator, on / / , with regard to similar problems identified on the 2006 1012A's.

To recapitulate recommendations made within the body of the report OCC should:

- * Ensure that all necessary information is included in the application, particularly with respect to either the current reservoir pressure or the static water level.
- * Start collecting, point forward for any new permits or in any special area of investigation, an easily accessible list of special permit stipulations.
- * Offer more explicit guidance on the running and reporting of Step-Rate information, especially with respect to the initial pressure and time increment selections.
- * Require fresh water sample locations to be plotted on the AOR map, per the regulations.
- * Determine why enforcement actions have decreased so dramatically over the last two years, and determine corrective action needed to address this.
- * Increase operator awareness of the requirement to transfer ownership of injection wells in a timely manner, perhaps by letters to operators that have filed for production well transfers, and/or reminders in the 1012A letter.
- * Continue to improve the quality and timeliness of reporting form 7520 and providing all other work-plan reporting requirements.

Finally, OCC and other state agencies have indicated to EPA the need for training for new staff, and special topic training for other UIC staff members. This is covered in [Appendix D](#), in the letter from Larry Wright to Lori Wrotenbery. OCC has since requested prepared guidelines for running and interpreting Step-Rate tests, as a result of several problems issues discussed earlier in this report. EPA will continue to work to complete these requests.

APPENDIX A
STATE/EPA Staff in Attendance
September 7, 2007
FY 2007 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Patricia Downey	Oklahoma Corporation Commission	(405) 522-2802
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Mike Vaughan	Environmental Protection Agency	(214) 665-7313

APPENDIX B

Scan of the following letters:

- o May 25, 2007, Ms. Wrotenbery to Mr. Flores
- o July 23, 2007, Mr. Flores to Ms. Wrotenbery

Secretary
Commissioner

Denise Bode
Commissioner

Jeff
Commis

OKLAHOMA

Corporation Commission

P.O. BOX 52000
OKLAHOMA CITY OKLAHOMA 73152-2000

OIL & GAS CONSERVATION DIVISION



Photo and Signature
Following:

SWQ-D *Miguel*

SWQ-A *Bill*

SWQ-C

SWQ-E

SWQ-P

SWQ-B *Lorey W. origin*

255 Jim Thorpe Bu

Telephone: (405)521-

FAX: (405)521-

Lori Wrotenery, Direc

RECEIVED
EPA-OWQ-DIR OFC
07 MAY 29 PM 6:26

May 25, 2007

Mr. Miguel I. Flores, Director
Water Quality Protection Division
Region 6
United States Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Mr. Flores:

I have received your office's evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2006 (FY06), which ended on June 30, 2006. The report notes several tasks that need attention, and we are committed to completing those tasks as soon as possible. I feel compelled, however, to address one paragraph of the transmittal letter immediately. This paragraph reads:

"This year's report does not make particular recommendations, but does highlight areas of concern with the enforcement program. For example, 24 reports of brine or brackish water purging to surface were associated with injection wells or waterflood units, yet no UIC referral or enforcement actions were noted. Additionally, mandatory maximum mileage limits were imposed on all OCC staff, including inspectors. We are concerned this change weakens the OCC surveillance program, which already is stretched thin."

I suspect this paragraph reflects some simple misunderstandings, but I worry it might mislead others who have no interest in delving deeper into the facts or gaining a fuller understanding of the issues. This paragraph should be retracted or clarified for several reasons.

First, the paragraph refers to 24 reports of brine or brackish water purging to surface associated with injection wells or waterflood units. It implies that no referral or enforcement actions were documented. In fact, a careful review of our files reveals that not all of these reported incidents were purges and not all were associated with injection operations, but that OCC took appropriate action in response to each. The 24 reports, which span the years from 2003 to 2006, break down this way:

- Two involved leaking wellheads, one on an injection well and the other on a producing well. Both were promptly fixed.
- One involved a complaint of contamination; however, sampling in response to the complaint found no contamination.
- Three involved seeps in areas of historical oil and gas activities; however, sampling found no contamination at or above action levels.

SERVICE • ASSISTANCE • COMPLIANCE
EXCELLENCE IS OUR STANDARD

- One involved a natural brine seep, as indicated by a Stiff diagram.
- In response to three of the reports, our Field Operations Department took appropriate enforcement action by requiring the operator to plug a purging well.
- Nine reports, some of which involved purging wells, were addressed through a cooperative effort between the Field Operations Department, the Pollution Abatement Department (including the UIC Section), and the operator. All have been resolved through appropriate enforcement action. Please note that seven of these reports occurred in one particular 640-acre section of southeast Oklahoma. Also, one of these reports was counted as three reports, but we have been unable to discern an explanation from your staff's notes.
- Two appear to be duplications as noted above.
- Two remain under investigation by the Pollution Abatement Department.
- One is currently pending in OCC's administrative court system.

Contrary to the implication of the transmittal letter, OCC has responded to all 24 (apparently 22) reports by investigating the complaint or discovery, and has taken appropriate enforcement action to correct any violations. All but three of the reported complaints or incidents have already been resolved. Two are still under investigation, and another has been docketed for hearing.

Second, the paragraph goes on to assert that OCC has imposed "mandatory maximum mileage limits" on all staff, including inspectors. While this statement has some basis in fact, it does not accurately describe the management controls that have been instituted. The expressed concern about an adverse impact on the UIC program is entirely unsubstantiated.

Here's the truth. In FY07, not FY06, OCC has had to take extra measures to control its expenditures on transportation. The need for these controls arose for several reasons, but principally because the cost of gasoline has risen to historic levels. I trust you understand the challenges of managing record gasoline prices on a tight budget, a situation that is aggravated by the continuing reductions in the EPA grant supporting the UIC program. In order to meet these challenges, OCC has established a monthly mileage limit of 1600 miles, which an inspector may not exceed without authorization from the district manager. The district manager has discretion to authorize additional mileage in emergencies or other special situations.

It is not true that there has been or will be any significant adverse effect on the UIC program from these mileage controls. OCC continues to give priority to UIC inspections as reflected in the numbers reported to EPA on Form 7520. These numbers continue to meet or exceed work plan targets.

Furthermore, OCC continues to manage its operations to maximize the presence of its inspectors in the field. Unlike their counterparts in other states in EPA Region VI, all OCC field inspectors live and work in the immediate vicinity of their assigned territories. In fact, throughout most of the State of Oklahoma, OCC has an oil and gas field inspector living within 30 minutes of each oil and gas producing or injection well. The only exceptions occur in far northwest Oklahoma, where we have four inspectors, and in the area assigned to one inspector in southeast Oklahoma. In these remote areas the response time to some wells is 30 minutes to an hour longer. Among other benefits, this deployment of the field inspectors enables them to cover more of their territories with less mileage and therefore mitigates the impact of mileage limits.

Letter to Miguel I. Flores, Director
Water Quality Protection Division, Region 6
U.S. Environmental Protection Agency
Page Three

While speculating about a possible weakening of OCC's surveillance program due to mileage controls, your office's evaluation fails to acknowledge that several recent developments are combining to strengthen OCC's surveillance program tremendously. Over the last several years, the number of field inspectors has grown from 49 to 58, an increase of 18%. I believe the current ratios of field inspectors to wells and field inspectors to office staff compare favorably to those in other states in Region VI. OCC has also increased the efficiency of the field inspectors by equipping them with laptop computers and wireless Internet connections. Please note that we remain extremely grateful to EPA for providing funding assistance needed to purchase the laptop computers. With these computers, the inspectors access a wide range of information on the operations in their areas and complete and file their reports electronically. Both of these capabilities enable the inspectors to accomplish more during each and every workday.

Finally, though your transmittal letter does not offer any particular recommendations, it alludes to other "areas of concern" with our enforcement program. Searching through the report attached to your letter in an attempt to understand the concerns, I find even more examples of erroneous statements and unfounded assertions about our enforcement program. The enforcement program at the OCC is well established and contains numerous procedures designed to ensure fairness and consistency and to obtain the desired results. We will be happy to walk you through those procedures at any time so you may judge for yourself.

The comments about our enforcement program suggest to me that we need to meet to review the basis for your concerns and attempt to formulate a plan of action to resolve them. I will be happy to host such a meeting here in Oklahoma City. Please let me know when you will be available to participate in this meeting, as you will be a necessary party to the discussion. Because of the potentially prejudicial effect of the comments on our UIC program, the sooner we can schedule this meeting, the better.

Sincerely,


Lori Wrotenberg, Director
Oil and Gas Conservation Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TX 75202-2733

JUL 23 2007

CERTIFIED MAIL 7004 1160 0003 0352 7191

RETURN RECEIPT REQUESTED

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

This letter both responds to your May 25, 2007, letter that expressed concerns about some issues covered in our FY06 End-of-Year evaluation of your agency's Underground Injection Control (UIC) Primacy Program, and discusses our related July 11th conference call. I am glad we had the call and believe it provided good discussion on various UIC program issues.

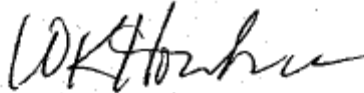
With respect to your concerns relating to cases of water purging to the surface, our information was gathered during file reviews conducted in your agency's district offices. Our statement that "no UIC referral or enforcement actions were noted for these purges" was not intended to allege none were taken, but simply indicated no documentation existed in the reviewed files that indicated the purge details were passed on to the UIC office in Oklahoma City. Your letter detailed follow-up actions taken for most of these purges. Taken together, the file review and your program's additional actions indicate that perhaps it isn't always possible to follow the program's enforcement processes from district office files. The proposed changes with the new database you mentioned should help alleviate these documentation difficulties in the future.

Regarding our concern about mileage limitations imposed on field inspectors, we understand the increasing cost of gasoline is a significant budget concern. Unfortunately, increasing operator fees to cover the increased costs is not a solution to this problem because of Oklahoma's financial procedures. We also share your concern about the level of EPA funding of the UIC program and have communicated this concern to our EPA Headquarters office for several years. Your letter states that OCC recently hired more field inspectors, and we commend you for that action to enhance your agency's surveillance activities. We were unaware of the additional inspectors prior to your letter.


To reiterate, our End-of-Year evaluation process fulfills our oversight responsibility under the UIC program of the Safe Drinking Water Act, including providing feedback on positive aspects of program implementation and recommending specific improvements to State UIC program performance. Our annual evaluation process includes input from the State agency on the draft version of our End-of-Year report. I understand that my staff provided a draft version of our FY06 evaluation to your staff for comment prior to transmitting the final report. The transmittal letter for our final report typically includes significant issues to highlight the importance of those issues.

Both your May 25th letter and this response will be included in our formal records as part of this year's End-of-Year review. I want to thank you and your staff for the work that is done by OCC to protect water resources in Oklahoma. I consider our open dialogue a key component of effective communication between our agencies. I look forward to continued communication on ways EPA can assist OCC in implementing the UIC program.

Sincerely yours,



Miguel I. Flores



Director

Water Quality Protection Division

cc: Tim Baker, OCC Manager Pollution Abatement
Charles Lord, OCC UIC Manager

APPENDIX C
Oklahoma Corporation Commission
Underground Injection Control
Class II Wells
Year-end Narrative
Work-plan 2007

Oklahoma Corporation Commission implemented a highly successful Program in FY 07 meeting or exceeding established targets as determined in Work-plan 2007. The attached "Annual Report Card", depicts a summary of Activities.

UIC inspections for 2007 were down from 2006 to 9,812. Total UIC applications were up at 795 for the year, 339 Disposals and 456 Injectors. Totals for approved orders were 262 Disposals and 287 Injectors, total order dismissals numbered 103.

The drop in UIC inspections for 2007 is due primarily inclement weather with rainfall totals 140% to 200% over normal this spring. Additionally, UIC site inspections are taking more time because the inspectors are taking and recording the Latitude and Longitude of each site.

The Oklahoma Corporation Commission, Oil and Gas Conservation Division has committed to converting to the RBDMS database. We have a projected 100% conversion to the system for the Oil and Gas Division by 12/30/2008.

Field Operations is currently collecting GPS data for UIC facilities in all four Districts. This is part of Field Operations long-term goal of obtaining a GPS position on all UIC wells within five years.

In the area of GIS, UIC has completed the Oklahoma Corporation Commissions aerial photo library. We are current on 2006 aerial photos from the NAIP. At this time we have county wide aerial photos for the years 1995, 2003, 2004, 2005, 2006 in all 77 counties. Updated maps with well data current to 7/10/2007 should be in the hands of our field inspectors by the end of September of this year. All of this data we have made available to the EPA.

The EPA accepted a grant proposal made by UIC for a Helicopter EM survey in southern Oklahoma to investigate possible UIC related pollution.

The USGS selected Fugro Airborne Surveys to conduct a Helicopter EM survey under their direction, for a study of the Hunton Anticline of the Arbuckle Simpson aquifer in Southern Oklahoma. The Oklahoma Corporation Commission, with the EPA grant, took the opportunity to add-on 140 miles of flight lines in the within the Caddo and Wildhorse Creek watersheds of Stephens and Carter Counties. UIC special project funding in conjunction with part of a 303d grant, was used to fund the data acquisition and USGS interpretation.

The final survey area was agreed upon after discussions between OCC's UIC and Pollution Abatement, and the US EPA. FUGRO's results will be provided to USGS. USGS will do an initial quality control step and provide an interim report to OCC containing the digital apparent conductivity maps. This data will be used to delineate areas for detailed investigation for possible contaminant sources.

Annual Report Card
UIC Program Activities
Work-plan 2007
(7-1-06 through 6-30-07)

August 30, 2007

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	9,812
MITs (total)	2,300	2,641
MITs (Witnessed)	2,300	2,641
Permits (Total Issued)	NA	549
Technical Reviews	NA	604
Operatorship Transfers	NA	801
Technical conferences	NA	408

APPENDIX D

Scan of the following letter:

- o August 10, 2007, Mr. Wright to Ms. Wrotenbery



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 10, 2007

CERTIFIED MAIL 7006 0810 0005 9535 5464 RETURN RECEIPT REQUESTED

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

This letter relates to our July 11th conference call, specifically to the four additional UIC related items we discussed which were not the subject of your letter and which are not discussed in Miguel Flores' letter of response dated July 23, 2007. Those items were: training, RBDMS funding, Class V and Class II program revisions.

When asked what you saw as areas that EPA may be able to assist your program, you mentioned staff training, especially for new inspectors. As we mentioned, we have requested the National UIC Inspector Training Course for 2008 be held in Dallas. Also, two of our staff have given a course called "Nuts and Bolts of Falloff Testing" to other state and federal UIC programs, with some tailoring to the specific needs of the particular audience. That could be arranged for OCC, at your request, or OCC could write a special project grant proposal to Region 6. Another option is to work through the GWPC, as other state programs are facing the same issues.

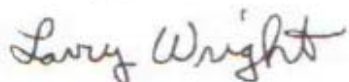
The second point you mentioned was related to financing the conversion from OCC's current well database system to RBDMS, as there are potential GWPC budget issues. There are two possibilities OCC can pursue: a grant through the EPA Network Exchange Grant program, (details forwarded to Charles Lord via e-mail on July 12th), and/or through a special project grant proposal.

The third point discussed was the Class V program revision status. You said there were changes in the legal and UIC departments at OCC since the first response was written. In addition, there are staff changes at ODEQ, and it would be necessary to get momentum going again at both agencies. You also mentioned working towards completion of the program revision by April 1, 2008, for a submission to the legislature. In the meantime, Tim Baker was tasked with setting up a joint meeting between OCC, DEQ and EPA to establish a realistic timetable and goals. It was our understanding that the meeting would be arranged within a few weeks after the conference call.

The fourth point discussed was the Class II program revision response to EPA's questions. It is our understanding that OCC's proposed response has lain dormant and will need to be revisited and rewritten with the current staff's input. OCC will review their draft and provide EPA with a timeframe in which we could expect to receive a response. It was stated that it might take about a month after the conference call to be able to estimate the timing.

Please let me know if you have any questions or comments regarding our understanding of the four items discussed during the July 11th conference call. I look forward to working with OCC on moving these UIC-related issues forward.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Larry Wright", with a stylized, cursive script.

Larry D. Wright
Chief
Source Water Protection Branch

cc: Tim Baker, OCC Pollution Abatement Manager
Charles Lord, OCC UIC Manager

APPENDIX E
Quality Oklahoma Team Day

Scans of the following:

- o E-mail May 3, 2007, Mr. Griffith to Ms. Dorsey
- o OCC award

"Bob Griffith" <B.Griffith@occemail.com>

05/03/2007 11:53 AM

To Nancy Dorsey/R6/USEPA/US@EPA

Cc "Lori Wrotenbery" <L.Wrotenbery@occemail.com>, "Wayne Wright" <W.Wright@occemail.com>, "Charles Lord" <C.Lord@occemail.com>

bcc

Subject Quality Oklahoma Team Day

Nancy

Charles ask me to drop you a line about the presentation on Tuesday, May 8th, 2007, this is a competition against other agencies in the state. You have to have had a team project that has made a substantial impact on your agencies mode of operations, time management, cost savings and morale and I am glad to say that with the help of the EPA we have done just that. Our Pilot Laptop Project has turned into a Laptop program, it has improved the performance of our agency and the reporting time of complaints involving spills. The incorporation of GIS data with Oil & Gas, UIC data has cut down on mileage and field time spent researching on the phone to find a responsible party. Wireless internet connection in the field has also made it easier for the field staff to use internet resources to do in-depth investigations on potential problems, not only this but we have developed all of our electronic forms for use in the field changing the wait time from day's to minutes and also incorporating signature pads we have the only E-Signed 1075-MIT program in the nation. We are very proud of what has grown from your participation in our project and on May 8th we will be showing it to the state. This has also been on display at the annual GWPC\RBDMS training meeting last May in Anchorage Ak. and has led to our involvement in that group and the launch of a RBDMS program here. I can't thank you and your agency enough for your support.

Bob G. Griffith Sr
OCC O&G IT Coordinator
b.griffith@occemail.com
(405) 833-0844



APPENDIX F

Internal Tracking System Details

Order 429534 dated Jan. 14, 1999, for the Franklin Unit 8-9, API 019-30383:

- UIC Permits System:
 - Order Information
 - Test Interval: 60
 - Order Comments: increase rate from 500
 - Well Information
 - Entries on this and the UIC Order Report: Order Type 1015A page match
 - Shut-in Static Fluid Level: 0
 - This is very confusing!** Does it truly mean that water is at the surface, or that the information was not filled in? Some of the applications do show '0' in the form area without indicating either psi (formation pressure) or feet.
 - Both forms have other information
 - Includes information on Wells in Area of Review (AOR) with Corrective Action
- UIC Order Report System: Order Type 1015A
 - Well Information
 - Entries on both this and the Order Information page match
 - Both forms have other information
 - Order report includes 'Drilling Completed' and 'Passed Review'
 - This example noted **"Passed Review: N"**
 - Please explain this. (The record was updated after the Order was signed.)
 - Formation Information
 - Lists the appropriate formation name, average porosity and permeability, Interval and Formation Pressure
 - Lists Top: 2925 & Bottom: 3782 (857' thick, versus 60' test interval)
 - Excellent, average formation parameters and pressure were actually populated—the operators do not always provide this information.
- Neither mention the order stipulations:
 - Mechanical Integrity Test every two years, and a tracer survey. (From Order scan)
- UIC Permits: Well Information
 - The link went to a well unconnected to the Order—perhaps due to a lack of instruction?
 - If accessed from the Order information screen, the problem did not occur
- UIC Well Report
 - Includes all the well location information, well type, status, Current Order type and a list of all the orders with dates that have applied to the well
- UIC Well Browse
 - MIT's for well; when printed it does not show which well the information is for
 - This printed example I took away showed only one "Other test": fluid for 5-19-1999; the next test was in five years, followed by another in two years.
 - Show 1012 only gives a total volume; the monthly rate and pressure would most likely be more helpful to enforcement



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MAR - 5 2009

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2008 (FY08). On September 30, 2008, Ms. Nancy Dorsey, along with Phil Dellinger and Mike Overbay, visited Oklahoma Corporation Commission (OCC) offices and took part in discussions with Mr. Charles Lord, Mr. Tim Baker and Ms. Patricia Downey about current UIC program implementation. Mr. Michael Vaughan of our Grants Section joined in by telephone. By e-mail on December 18, 2008, we invited OCC's comments on the draft evaluation. This report considers OCC's comments received by e-mail on January 12, 2009 and January 21, 2009.

First, we would like to commend OCC on several program areas:

- ❖ The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed minimum requirements.
- ❖ OCC showed continued innovation and effective use of special project funding as documented in OCC's Annual UIC Narrative for FY08, (see Appendix B).
- ❖ A strong effort was put in on the revision of the Quality Assurance Project Plan for the UIC program.
- ❖ The work to measure the coordinates of well locations using GPS (see Appendix B) continued.

The primary issues discussed in this report involve public participation; permit file review findings; final permit issues; enforcement trends; and needed program revisions. These were discussed with your staff at the September 30th End-of-Year (EOY) meeting at your office. Comments received from them at that time are incorporated in the body of the report.

With respect to the program revisions, on November 30, 1998, the Oklahoma Corporation Commission (OCC) submitted a draft program revision from Oklahoma's Class II Underground Injection Control (UIC) program as part of an interagency agreement. Subsequently, our agencies worked toward resolution of both scope and authority issues as well as substantial changes to Oklahoma's applicable Class II UIC primacy program. In order to assure OCC's Class II primacy program meets Safe Drinking Water Act (SDWA) protection standards, I respectfully request that your agency submit a complete revision package incorporating relevant rule changes pursuant to the requirements of 40 CFR §145.32. This request applies only to that portion of Oklahoma's UIC primacy program previously approved under Section 1425 of the Safe Drinking Water Act.

In addition to the SDWA 1425 primacy revision, OCC and the Oklahoma Department of Environmental Quality (ODEQ) submitted a draft program revision package to Region 6 in June 2000. Subsequent to continued dialogue between EPA, OCC and ODEQ, your agency adopted regulatory revisions in 2005 in consideration of applicable Class V federal permitting requirements. However, issues still exist regarding permitting of Class V wells for aquifer remediation activities associated with leaking aboveground and underground storage tanks. Correspondingly, I also request that your agency submit to ODEQ your portion of a final submittal, so that ODEQ may submit a complete Class I, III, IV, and V UIC revision package for formal review.

Upon receipt of either complete revision package (SDWA 1425 or 1422), Region 6 will evaluate and process the revisions pursuant to 40 CFR §145.32. I thank you and your staff for your efforts in the implementation of this challenging program. I consider our open dialogue a key component of effective communication between our agencies. If you have any questions on the evaluation report or the revision requests, you may contact me at (214) 665-7100, or your staff may call Larry Wright or Philip Dellinger of my staff at (214) 665-7150.

Sincerely yours,



Miguel I. Flores

Director

Water Quality Protection Division

Enclosure

cc: Charles Lord, OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2008 (FY08)
July 1, 2007 through June 30, 2008**

I. INTRODUCTION

This report is broken into five main sections: Introduction, Grant Work Plan, Program Revisions, UIC Oversight Issues, and Recommendations¹. Additional information is included in the appendices.

By EPA delegation, the Oklahoma Corporation Commission (OCC) is the lead agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2007 and June 30, 2008.

On September 30, 2008, EPA Region 6 representatives met with OCC management for EPA's annual end of year (EOY) evaluation (see Appendix A for attendees). Appendix B contains OCC's annual narrative required in the FY08 UIC grant work plan.

II. GRANT WORK PLAN

A. FY2008 Grant

The approved Federal FY08 allotment for the State of Oklahoma's UIC program administered by the OCC was \$285,500, and this amount was awarded to OCC in FY2008. OCC was also awarded \$59,513 in UIC special project funds in FY2008, but owing to delays, approximately \$29,191 of these UIC Special Project funds will be carried over into FY2009. OCC submitted an application for \$1,047,220 in federal funds.

Work plan Deliverables—Table 1 identifies State program updates and other deliverables required during FY08. This fiscal year several quarterly reporting items under OCC's workplan were submitted late:

- Injection orders terminated by OCC on a quarterly basis as an attachment to Form 7520-4 were only submitted for the first quarter. E-mailed and received January 9, 2009.
- Quarterly lists or statement of no cases of UIC violations in which leakage or discharge into a USDW occurred were provided. E-mailed, on single case, and received January 9, 2009.

¹ Underlined words are hyperlinked for easier electronic navigation. You can add a 'back button' by going to View: Toolbars: Web.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	January 31, 2008 April 30, 2008 July 30, 2008 October 31, 2008	January 30, 2008 May 15, 2008 July 29, 2008 December 2, 2008***
Grant Work plan/Application: FY08	May 1, 2008	May 23, 2008
Annual UIC Narrative Report	August 15, 2008	September 18, 2008 Revised
Final Financial Status	September 30, 2008	July 14, 2008
UIC Well Inventory	October 30, 2008 or on request	Part of PAM*
EPA PAM Reporting	Within 7 days of EPA request	On time
Revised QAPP	February 7, 2008 + two extensions to July 30, 2008	Initial Dec 2007 Approved July 1, 2008**

* Program Activity Measures (PAM)

** After rewrite.

*** Additional information listed in Workplan, received January 9.

B. Special Projects

OCC's past special project funds are well described in the OCC Narrative in Appendix B. EPA recognizes the innovation and usefulness of these projects and looks forward to the results of the ground truth efforts of the helicopter electromagnetic survey run in Fiscal Year 07.

III. PROGRAM REVISIONS

After a joint conference call on July 11, 2007, (see EOY FY07), there has been little actual progress despite some motion on both sides. EPA will continue to work toward resolution of this matter. A brief discussion on the background of each of the revision packages follows:

A. Update of Draft Section 1425 Program Revision

Since OCC's submission of a draft Class II UIC program revision package in December 1998, many issues first identified during the region's program review dated December 15, 1997, remain unresolved. Correspondingly, Region 6 responded to OCC's 1998 draft Class II UIC program revision package on April 8, 2004, with a request for additional information on water quality protection standards, area of review effectiveness criteria, financial assurance, and corrective action authorities. While preparing a response to EPA's request, OCC requested multiple deadline extensions including the latest via e-mail on April 14, 2005, offering the end of June 2005 as a qualified answer date. The topic was broached again at the EOY review on September 7, 2007.

Resolution of this longstanding issue is important. OCC's Oil & Gas Conservation Division Director Lori Wrotenbery requested her Manager of Pollution Abatement, Mr. Baker, to review the initial draft response document and to provide EPA with a timeframe in which to expect their revised response. This was to have been within a month of the July 11, 2007 conference call, though EPA's letter confirming the conversation did not go out until August 10, 2007. A formal response to the 1425 comments was received February 20, 2008, but failed to address the ongoing concerns. EPA will continue to work toward resolution of this matter.

OCC Comment: OCC is waiting on a written response from EPA, OCC is unaware of EPA's concerns.

B. Update of Draft Section 1422 Program Revision

In a draft joint program submission with ODEQ dated June 30, 2000, OCC seeks UIC Primacy authority for certain Class V activities: Re-injection of spent brine into the same formation following halogen removal; and aquifer remediation wells associated with leaking petroleum storage tanks. In 2002, at EPA's request, both Agencies submitted regulatory crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 sent comments to both agencies on May 28, 2002, and as of this report, EPA continues to await resubmission from Oklahoma's UIC Primacy agencies of an amended revision package for SDWA Section 1422 authority. Currently SDWA authorization of all Class V UIC activities lies with ODEQ, not OCC, and will remain so until EPA approves a revision to Oklahoma's applicable program pursuant to 40 CFR Part 145.

After renewed requests by EPA for both program revision packages, Mr. Tim Baker transmitted to Larry Wright in a letter dated August 5, 2005, OCC's proposed regulations for Class V wells under "jurisdiction" of OCC Oil and Gas Division "in response to Region 6 comments received in April, 2002." Those proposed regulations cite applicable Federal UIC regulations regarding applications for a "Class V underground injection well (a brine mining underground injection well)." The wells in question are spent brine return wells following halogen removal [Class V, by rule at 146.5(e)(14)] not Class III brine mining wells. In addition, the rulemaking does not address the Class V aquifer remediation wells associated with AST and UST cleanup operations under OCC Petroleum Storage Tank Division authority, referring only to "brine mining" wells, which are currently under ODEQ jurisdiction. Mr. Baker's transmittal letter indicates that the proposed regulations are in response to EPA's "April 2002" comments. Other issues regarding EPA's crosswalk comments remain to be addressed and resolved.

OCC's Oil & Gas Conservation Division Director requested Mr. Baker on her staff to set up a joint meeting between OCC, ODEQ and EPA to establish a realistic timetable and goals. This was to have taken place within a few weeks of our July 11th 2007, conference call, though EPA's letter confirming the conversation did not go out until August 10th. OCC met with ODEQ on August 24th 2007, to discuss the 1422 status. Following that meeting, at OCC's request, a copy of all related correspondence since 2002 was sent to OCC by the Region. On September 7, 2007, EPA met with OCC's Petroleum Storage Tank Division to discuss their participation in the program revision discussions. The meeting with all parties to discuss the 1422 revision was held December 12, 2007. EPA completed its two action items on December 21, 2007, and is awaiting response from OCC.

IV. UIC OVERSIGHT ISSUES

EPA has expressed concerns with some aspects of the OCC permit process over the last few years. These concerns primarily focus on OCC's area of review process, financial surety requirements, permit stipulation tracking and follow-through. Typical permit stipulations added to an injection permit include requirements to monitor nearby wells, and to run initial and/or periodic radioactive tracer surveys. These are an important part of ensuring ground water protection.

Figure 1 shows the change in permit applications over the last five years. The number of applications for this fiscal year was down from last year.

A. Permit Review

As part of EPA's permit file review process, every eleventh UIC permit application received during the year was reviewed, plus five additional permits selected based on citizen queries or other complaints; see Table 2. Nine of the permits reviewed were amendments in which issues were identified. These led to the review of the previous or original permit application as well.

Table 2. Permit Selection

Every 11th	52
Extras	5
Original app	9
Reviewed Permits	66

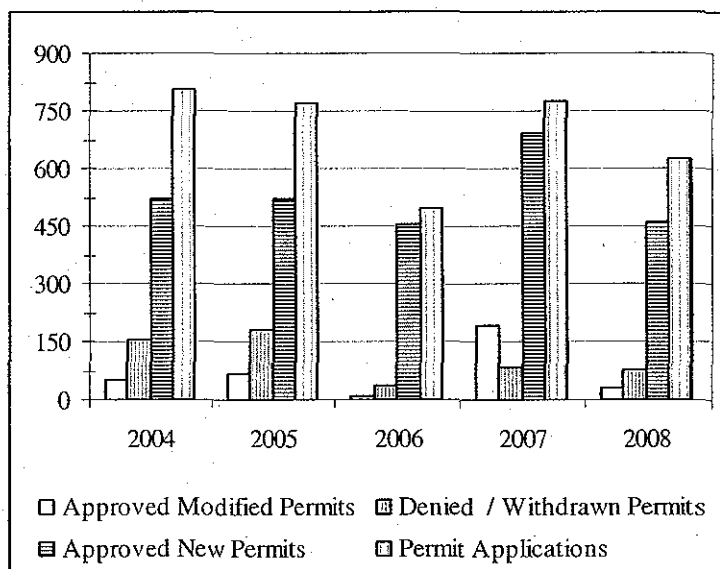


Figure 1: Class II Permitting Actions

1. 'Notice of Hearing'

At the End-of-Year evaluation meeting, the use of Public Hearings for UIC permits was clarified:

- ❖ All non-emergency permits receive the same technical review, regardless of application and hearing status.
- ❖ If a permit application is protested, the application is withdrawn and the permit reapplied for, along with a scheduled public hearing. If prior to the hearing, the protests are resolved, the permit receives administrative approval. If there is no agreement reached, the decision goes to the hearing judge in a Protested Hearing, but there is no permit until the UIC Program Manager signs the permit order.
- ❖ In some cases, applicants apply immediately for the public hearing, by a 'Notice of Hearing Application', along with filing the application form. In these cases there is an Administrative Hearing with Administrative approval, and as above, the signed permit order from UIC is still required.

Last year, one well received a permit through both a hearing and the standard review process, but the two permits were inconsistent. (This inconsistency was resolved when brought to the attention of OCC.)

2. Relief Sought: injection requests

During the last review phase of this document, the Notices included with PD200700529, PD200700363 and PD200800257 were revisited. An additional similar type OCC 'Notice' record was found for PD200800383.

These records all are stamped in through the Clerk's office and headed 'Before the Corporation Commission of the State of Oklahoma'. They all list an Applicant, Relief Sought, Legal Description and somewhere list contact information. All are requesting authority to inject, but vary whether it is a new or amended application. All the applicants submitted separate 1015 or 1015A forms.

Two of these notices, from Capstone Oilfield Disposal Services, Inc end with 'Done and performed this (date), by order of the Commission'. PD200700363 is actually signed by the commissioners. Neither of these applications appears to have been completed—as there are no final orders scanned.

None of these notices reference the UIC department, and the UIC manager is now investigating these notices at EPA request to determine their source and purpose.

3. Application PD200700363, Capstone's Ring 3-7

Application PD200700363 was to revise an existing permit in order to clarify the permit Order language. The initial application (last fiscal year) converting the well from disposal to commercial had been contested. Part of the resolution of the original protest (permit 538056 granted 4/17/07) was "Applicant is required to have radioactive tracer surveys performed on the subject well on an annual basis. Applicant's authority to utilize the subject well for commercial disposal shall terminate if it fails to perform the radioactive tracer surveys on an annual basis, if the results of the radioactive tracer survey(s) reflect that the fluids disposed of into the well are entering formations other than the disposal formations permitted in this order, or if the manner in which the radioactive tracer survey(s) is performed or the results of such survey(s) are not acceptable to the Commission."

The tracer was run and passed by OCC. However the tracer tool could not reach the bottom of the well because of an obstruction at 7698' in the Silurian, above the Arbuckle. This raised the issue of where the injection interval could justifiably be permitted. The casing was intentionally perforated only in the Arbuckle, but communication from the Silurian down could not be definitively proven. This is a central point in stipulations for the order mentioned above. In addition, the distance between the obstruction and the top of the Arbuckle (8658') appears to render a radioactive tracer survey invalid for confirming the integrity of the lower cement.

As the zone in the Silurian had not been perforated, OCC and the operator worked out a plan for the operator to resubmit an application listing the zone from the obstruction to the bottom perforation depth as the injection interval. The application PD200700363 was submitted along with a public hearing notice. The application was amended twice in the course of discussions with OCC. An emergency order was granted by OCC to allow continued injection, while the permit process ran its course. The emergency permit (543456) expired 11/25/07.

As of this report, there has been no further information scanned for the file. As of September 10, 2008, the OCC permit reviewer reported he has had no further communication and is waiting on information. Normally, after this length of time waiting on material, the application would have been cancelled. Instead OCC maintains that the company has a valid permit, but there has been no amended permit order with matching existing well conditions executed or signed. Questions that remained unanswered, prior to OCC comments on this EOY, are:

- 1) Does the well in the existing conditions actually have injection approval, either commercial or non-commercial?
- 2) If it does, why was the amended application necessary?

OCC Comment:

- a) *The operator does not have an order.*
- b) *At this point the attorney for the operator needs only to write an order for signature*
- c) *OCC staff attorney is presently filing an action against the Operator.*
- d) *The operator will file an application for an emergency order to cover time until approval of order.*

4. Permit Review Statistics

Table 3 shows the results of the review by permit type. Forty-four permits were included in the statistical analysis of Tables 3 and 4, of which 33 had been issued by September 10th (including orders from 543095 to 558234). Permits were excluded from the statistics, if they were not UIC permits, were from previous years, or had insufficient information as of the review period. Included means that the permits were used in the statistical analysis.

The shortest time from application to Order was 19 days, the longest was 122 days, with the median 42 days, see Table 4. The 11 applications have been waiting on decisions for 91 to 360 days, as of September 10, 2008. As of November 2008, all were either held up for information from the operator (such as the one discussed above), or are contested.

The time it takes to process a permit covers a wide range, primarily dependent on the operator filing a complete package. The second cause of delayed processing is protested applications. With one exception, the median time for letters of filing omission being sent to the operators was two days, which is commendable timeliness.

Table 3. Permit Review

	ALL PERMITS	Excluded	Dismissed	Protested	Protest Dismiss	Include	Issued	In Progress
TOTALS	66	19	3	3	2	44	33	15
Commercial	6	2	2	2	2	2	3	1
Non-commercial	30	7	0	1	0	23	12	10
EOR	23	3	1	0	0	19	18	4
Exception	0	0	0	0	0	0	0	0
Simultaneous	0	0	0	0	0	0	0	0
Injection	0	0	0	0	0	0	0	0
other	7	7						

Table 4. Permit Timing

Permit Type	Time - Application to Issue			Time Waiting as of 9/10/08		
	No. of Permits	min days	max days	Permits	min days	max days
Commercial	2	29	106	1	398	398
Non-commercial	13	19	119	10	103	310
EOR	16	21	122	4	91	360
Amendment	10	21	101	3	330	398
Conversion	13	19	122	9	91	310
TBD	8	25	119	3	137	266

5. Public Notice

OAC 165:5-7-1(n)(2): "In oil and gas causes, unless otherwise provided in this Subchapter, the notice of hearing shall be published one time at least fifteen (15 days) prior to the hearing in a newspaper of general circulation and in a newspaper of general circulation published in each county in which the lands embraced in the application are located."

OAC 165:5-7-27(d): "Notice of an application relating to injection, disposal or commercial wells shall be published one time for injection and noncommercial disposal wells and two times for a commercial disposal well in a newspaper of general circulation published in Oklahoma City, Oklahoma, and in a newspaper of general circulation published in each county in which land embraced in the application are located. ..."

OCC Comment: OCC legal staff interprets **and** to mean one publication for any well drilled in Oklahoma County.

OAC 165:5-7-27(e): "If a written objection to the application is filed within fifteen (15) days after the application is published for injection and noncommercial disposal wells or thirty (30) days after the last publication date for commercial disposal wells, or if hearing is required by the Commission, the application shall be set for hearing and notice thereof shall be given in the same manner as required for the filing of the application. ..."

OAC 165:5-7-30(2): "Notice of the application relating to the nature of the amendment shall be published pursuant to 165:5-7-1(n)(2)."

One permit (200700352) was granted in 9 days, before the 15 day required public comment period ended, following issuance of the public notices.

Several errors in public notices of the permit requests were noted: PD200700374 (wrong second quarter), 418 (wrong perforation intervals), 200800060 (bottom perforation off), 269 (API incorrect—application not complete).

Only one public notice was issued for PD200700396 and 200800302. Both are amended applications for wells in Oklahoma County. OCC representatives maintain that for a well in Oklahoma County, only one set of publications is required. However, this appears inconsistent with the "and" stated in OAC 165:5-7-27(d) as noted above. This regulation should be revised to clearly match the required standard as practiced.

OCC Comment²: emergency orders only require one notice(PD20070036); PD200700396 Oklahoma County (one pub required); PD200700429 not approved, still in permitting process; 473 amended order, still in permitting process.

The commission interprets OAC 165:5-7-27(d) to mean any well drilled in Oklahoma county will only publish in Oklahoma County once per requirement (once non, twice commercial).

6. Supplied Data Issues

In previous years, the EPA reported problems ranging from operators not submitting complete permit applications to issues with misinterpreting fracture pressures from operator provided data. This trend continues as shown below.

- ❖ Base of treatable water (BTW), present 96% of the time (permits with missing information are waiting on data)
- ❖ Injection Formation, Top Injection Zone, Base Injection Zone, 98% (as above)
- ❖ Porosity, present in 54% of applications
- ❖ Permeability, present in 43% of applications
- ❖ Pressure, present in 35% of applications

² Comments regarding emergency permit application and permits still in progress were removed, in response to this comment.

The applications missing the first two bulleted elements have not yet been approved. They are waiting on information. With regard to the remaining information, during the EOY meeting, OCC stated they only request this information 'if a mud plugged well is identified within the area of review, despite the fact their regulations require the information where available'.

7. Data Review Issues

The following information was collated from file reviews conducted prior to learning from OCC that the application review requirements changed during the year. As noted previously, the reviewers only run a ZEI calculation or ask for other necessary information if a mud plugged well has been identified. The information is generally not requested even if large injection pressure increases are requested.

a) Hunt Engineering Applications (PD 200700450 & 45.)

EPA's review of these two files raises serious questions on the quality of these OCC technical reviews. In the review of both these permits, OCC identified mud plugged wells within the ¼ mile area of review (AOR). In both cases the operator's explanation was accepted as sufficient, though appear to lack technical merit. The details follow.

Hunt Engineering submitted two amended permit applications, (PD 200700450 & 451.) The reason offered for requesting a permit amendment was that the 300 pounds per square inch (psi) injection pressure was no longer effective, as the static pressure was now 500 psi.

500 psi surface static pressure \cong 1970 psi, at the top reservoir injection level

OCC Comment: After review of exhibit package I have been assured that the 500 psi is the bottom hole pressure and not surface pressure.

EPA Response: The oilfield service report lists "Static Pressure 500 psi". In general, no operator will acidize a well with a bottom hole pressure gauge in the well.

Both wells were permitted for enhanced recovery (EOR) in 2002, (PD200200245 & 246). At that time the applications stated the injection wells had static fluid levels at 700' (around 1120 psi reservoir pressure). The mud plugged wells were not identified at that time. Both sets of applications listed porosity between 16 to 18% with permeability of 100 millidarcies (md). OCC's zone of endangering influence (ZEI) calculations used 16% porosity, and 50 md in one well but 100md in the other. The ZEI was significantly greater than ¼ mile.

OCC Comment: The AOR at the time (2002) showed no problem wells in the area.

This year, after the operator was informed of the mud plugged wells, OCC received a series of permeability calculations and ZEI calculations from the operator supporting a near zero ZEI. The operator increased the porosity from 17% reported in the application, to 23% based on information that was not available in the scanned data. The operator also used the 500 psi static pressure from the acid test, which would be a surface pressure, as the reservoir pressure, then back calculated permeability while changing basic assumptions several times.

OCC accepted all of the operator's new values, used them to calculate their own 0 – 12 ft. ZEI results and approved both permits.

Specific EPA concerns from this review include:

- i) Allowing injection into an overpressured (500 psi static surface pressure) reservoir with mud-plugged wells in the area.

OCC Comment: Again, this is bottom hole pressure.

- ii) While the radial flow calculations do allow for some interpretive license, the numbers for basic parameters such as the ratio of radial influence to wellbore radius should not change appreciably in an amended calculation. The calculations offered were based on an acid treatment, but the depths, even on the recalculation, did not match the well on which the treatment was performed, nor was there any documented effort to verify the true reservoir pressure through other means.
- iii) No documentation was included supporting the substantial increase in the porosity value used in the pressure buildup calculation.

b) ZEI Calculations

Other instances of concern over technical review of a permit application include using zero porosity and permeability in a ZEI calculation (200800258). In addition, OCC has simply stopped calculating the ZEI more than half the time, per Table 5. OCC's rationale for this decision is the permeability and porosity aren't known anyway, so the calculations are not accurate.

OCC Comments: Obviously the well does not have zero pressure and permeability. This was an error of no consequence since there were no problem wells in the AOR.

Table 5. ZEI Calculations

Application Type	Approved Permits	OCC ZEI Calculations	ZEI > 1/4 mile		OCC no ZEI Calculated	ZEI > 1/4 mile EPA**
			OCC	EPA* yes OCC no		
Amendment	10	5	1	2	5	1
Conversion	13	4	0	0	9	2
To Be Drilled	8	3	2	0	5	0
subtotal	31	12	3	2	19	3

* EPA only checked two calculations and disagreed with the input, discussed above

** EPA checked four permits that OCC did no calculations for

In response to EPA's 2007 EOY ZEI issues, OCC commented, "The Oklahoma Corporation Commission (OCC) does not use the zone of endangering influence (ZEI) calculation to approve Class II well permits. The OCC uses the 1/4 mile area of review (AOR). If a mud plugged well or an off-setting well that does not have the geologic zone adequately cemented across the zone is intended to be used for disposal or injection within a 1/4 mile of the subject well, then the ZEI calculation may be relevant. At that time porosity, permeability, and reservoir information is necessary information. If the fluid level is at the surface or if there is a shut in positive pressure on the subject well, the calculation of the ZEI is meaningless due to the fact the calculation will show the ZEI to be infinite. The ZEI has shown to be a useful tool for calculations within the 1/4 mile AOR. Outside the 1/4 mile AOR the validity of the equation is highly questionable. In the Region VI meeting in 2003 with the Class II well program states this very issue was discussed. At the conclusion of the meeting, all of the states were found to be using the fixed AOR and none of the states were encountering problems with contaminating USDWs as a result of using this permitting procedure. Therefore, the statement of 62% of the approved permits had an AOR calculated greater than 1/4 of a mile is based upon values in the equation that were assumed values and not meaningful information and therefore it is not a statistic of any relevance."

EPA remains concerned with these fundamental program issues (see FY2007 EOY for EPA's comments on lack of key data).

c) Reservoir Data

With the combined issues of lack of operator information and OCC position on the relevance of the data, a comparison of supplied information and that is used by OCC in their ZEI calculations was run. The results are shown in Table 6. The two cases with mud plugged (MP) or problem wells refer to the Hunt applications discussed above. To alleviate the appearance that parameters were assigned to reach the desired results, all parameter sources should be documented in the QAPP and/or well files.

Table 6. Reservoir Data Comparison

Permit Type	Porosity (%) per Operator's Application				Porosity (%) per OCC ZEI Calculations				MP Pbm wells
	min	average	max	Number*	min	average	max	Number	
COMMERCIAL	5.0%	8.8%	12.5%	2				0	0
Non-commercial	5.0%	14.3%	25.0%	11	15.0%	19.7%	25.0%	3	1
EOR	11.0%	17.6%	22.4%	12	11.0%	17.1%	23.0%	9	2
with MP or Problem wells	17.0%	17.0%	17.0%	2	23.0%	23.0%	23.0%	2	

	Permeability (md) per Operator's Application				Permeability (md) per OCC ZEI Calculations				
	min	average	max	Number	min	average	max	Number	
COMMERCIAL	100	550	1,000	2				0	0
Non-commercial	18	183	500	7	939	1,272	1,900	3	1
EOR	2	124	330	11	126	1,119	2,747	9	2
with MP or Problem wells	100	169	238	2	500	500	500	2	

* Applications using zero values for either porosity or permeability are not incorporated in this table.

d) Fracture Pressure Identification

165:10-5-5(e): "No Commercial disposal well will be permitted whose injection pressure approaches or exceeds the demonstrated frac gradient of the injection zones(s)."

Last year the issue of properly identifying the fracture pressure and for operators using shallow injection zones proving that fractures are not vertical was broached. Discussions continued during this fiscal year, and resulted in adoption of specific language on Step-Rate Tests in the QAPP approved on July 1st.

Eight of the permit applications reviewed have injection pressure values that exceed the assumed fracture gradient of 0.5 psi/ft (Figure 2).

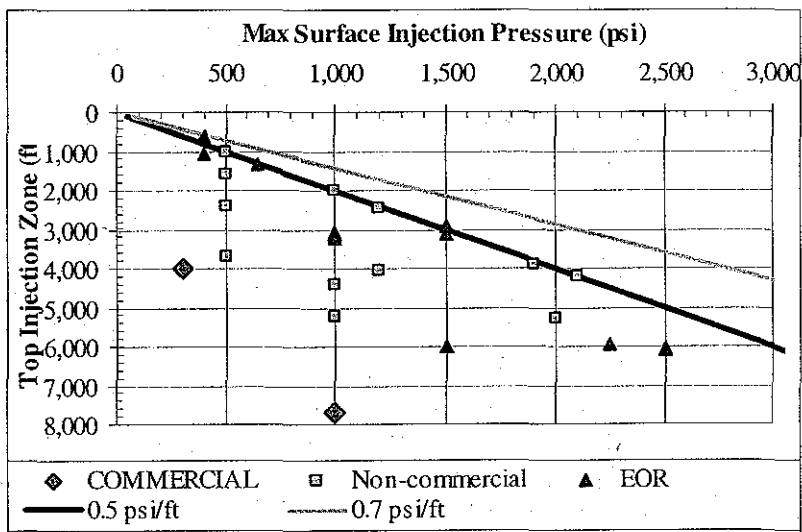


Figure 2: Fracture Potential

Two are still under review waiting on information: 200700429 & 473. The others (PD200700374, 561, 583 and 200800016, 203 and 258) were granted permits at the requested rates. In only one EOR case, 200800016, did the reviewer send the operator a request for information supporting the high injection pressure. However, there was no response documented in the file, and the permit was granted, with stipulations as noted below.

OCC Comment: *This well is on a yearly RAT and Pressure MIT to compensate for 44 psi over rule of thumb frac gradient.*

Permit application PD 200800203 (614' top injection, 0.63 psi/ft) did include a frac treatment report from a "nearby offset well". The tested well was not identified on any of the operator's maps nor is there any verification that the well was nearby. OCC's ZEI calculation was significantly greater than ¼ mile for this EOR well.

Permit PD200700583 (696' top injection, 0.50 psi/ft), no question was raised about potential fractures. The requested rate for this EOR well was only 50 BWPD with 350 psi maximum pressure. OCC ZEI calculation was significantly greater than ¼ mile, for this EOR well.

e) Miscellaneous Findings

PD200800258 - The final order matched the initial application, not the operator's amended application (Arbuckle 1000 – 1600'). The public notices match the amended application request.

- ◆ No documentation showing why the permit was not granted according to the amended request.
- ◆ The well's injection authorization (Arbuckle 1000 – 1200') does not match actual conditions.

OCC Comment: *Reduced interval does prevent well from being permitted.*

EPA Response: *EPA was unable to determine the reason for the inconsistencies discussed above.*

PD200800016 - The reviewer identified a discrepancy with a previously ordered cementing requirement. No response was in the file to indicate the problem was resolved, yet the well was given the amended permit.

OCC Comment: *Resolved with increased frequency of MIT (annual).*

This year there were only six applications for emergency injection approval, one of which was later withdrawn. The operators generally applied for emergency permit requests within 11 days of the initial permit application with a range of 6 to 25.

Of the emergency permits granted, two received final permits prior to expiration. Of the others PD200700462 (545759) expired two days early; PD200800049 (557604) expired 81 days earlier. The last (PD200700363) as of 9/23/08 had no final permit and the emergency permit expired:

- ◆ PD200800049, 'to be drilled', (Emergency Permit 550302)
 - ◆ Why would a well not drilled require an emergency injection permit?
 - ◆ **OCC Comment:** *Nothing in our rules prevents this.*
- ◆ 303 days before 9/23/08 for PD200700363, 'amendment to existing conditions' (Emergency Permit 543456) discussed earlier.

B. Effective Surveillance & Enforcement

OCC's EPA reporting Form 7520-3 shows many null values. It suggests to anyone viewing the results (Table 7), that OCC does not witness UIC well construction, plugging or answer complaints. OCC maintains the problem is related to communication of data between its district and central office; however, EPA remains concerned with inaccurately reported data. It is also noteworthy that 'Wells with Inspections' is not always the total of the individual inspection elements.

Table 7. Inspections

Inspections:	2004	2005	2006	2007	2008
Wells with	15,807	11,365	15,439	11,914	9,727
Construction witnessed	524	0	0	0	0
Complaint/Emergency Responses	0	0	0	0	0
Plugging witnessed	88	131	0	0	0
MIT witnessed	3,324	2,952	2,446	2,335	2,793
Routine / Periodic	11,871	8,413	12,993	9,579	6,934
Sum elements	15,807	11,496	15,439	11,914	9,727

1. Brine Complaint Response

Last year it was reported that OCC instituted a new procedure, whereby UIC personnel would assist Pollution Abatement in investigating any brine contamination of water wells that are reported, and have a possible UIC component. During the rewrite of the Quality Assurance Project Plan (Plan), EPA was informed that this assistance had stopped. OCC response to this question during the EOY discussion led to the following clarifications:

The Districts have the option of transferring the case to Pollution Abatement/UIC or simply requesting technical assistance for a particular part of the case. In either instance, the various EPA grant funded electromagnetic surveys are very popular with the districts, especially for locating mud plugged wells.

2. Mechanical Integrity Tests

OCC continues to annually conduct and witness (Appendix B) mechanical integrity tests for far greater than 20% of the inventoried injection wells, as required to meet the maximum five-year testing frequency for each well. OCC is again highly commended for this accomplishment and for witnessing all MITs. Figure 3 shows the number of MIT's witnessed, failed or violations, as well as any radioactive tracers (RAT) run. MIT failures include not testing on schedule and tests with significant leaks, but exclude those tests that subsequently passed the MIT after a failed test. Oklahoma's Class II UIC operators generally comply with the MIT requirements of OAC 165:10-5-6.

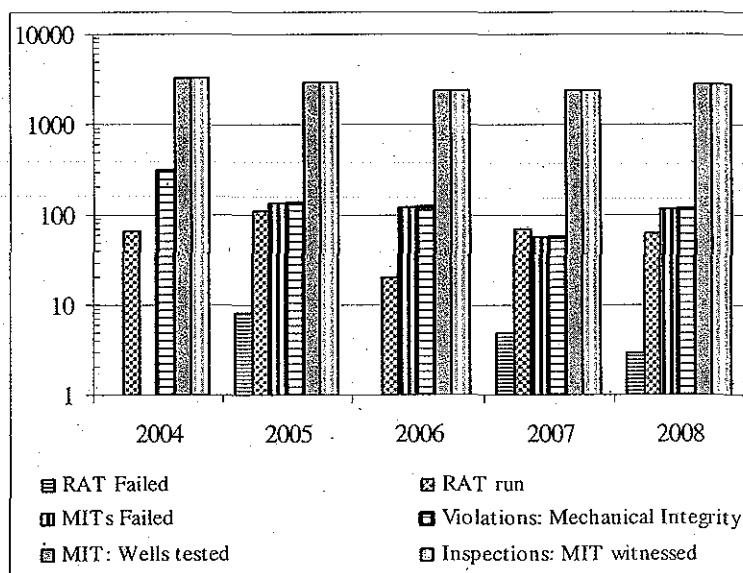


Figure 3. MIT & RAT Results

3. Enforcement Actions

Figure 4 shows the number of overall enforcement actions reported in the Form 7520. Although a reporting error is reflected in the 2004 data, the number of actions has decreased drastically over the last three years.

EPA has forwarded to OCC a number of problems involving wells operating outside both permitted rate and pressure. Each time enforcement followed through on the issue. However, on checking the online system, none of the operators showed any orders or fines levied against them. (In one case a coworker verified that at least one of these operations has continued injecting over pressure as before.)

EPA requests an explanation of the reasons for decreasing enforcement activity against operators acting outside OCC's rules. EPA also requests a response explaining the decrease in 'Orders & Agreements', which should include the decrease in Contempt Citations.

***OCC Comments:** With the increase in the price of oil it has become in the best interest of operators to keep their wells in compliance. Also a change in policy to have a staff attorney send a stern letter outlining consequences for noncompliance has greatly reduced the number of actions filed.*

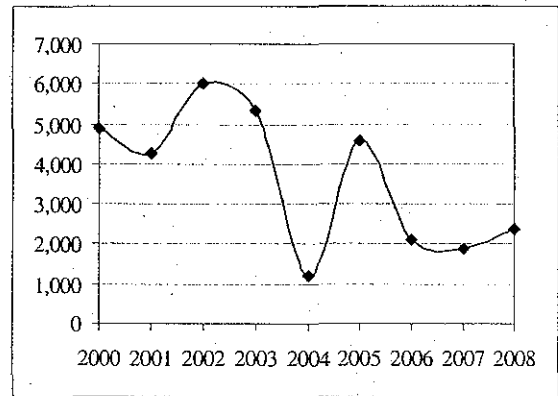


Figure 4. Total Enforcement Actions

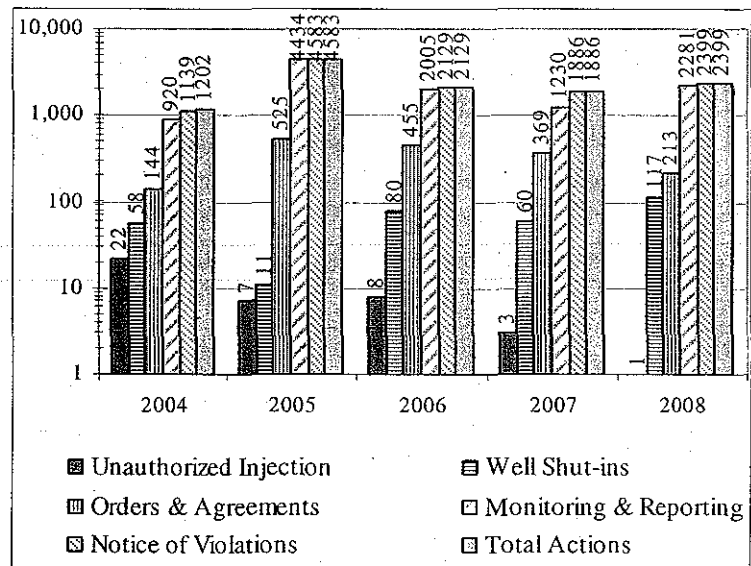


Figure 5. Overall Enforcement Actions

4. Risk Based Data Management System (RBDMS)

EPA joins OCC in looking forward to the benefits of the completed RBDMS database system.

V. SUMMARY AND RECOMMENDATIONS

OCC is commended for witnessing all mechanical integrity tests, far exceeding the EPA minimum recommended standard of 25%. In this last fiscal year OCC has been hit with a combination of increased workload and decreased staff. The result has been markedly decreased communication and a greater number of issues arising between OCC and EPA.

EPA recommends that OCC continue to pursue complete implementation of the RBDMS. Also, OCC should continue to pursue a program revision incorporating all changes/updates to its UIC program. One broad area of concern is the change from standardized formats for applications and permits to generic editable documents in Microsoft Word. Changes and omissions via edits by operators or OCC staff continue to result in errors. OCC should use uneditable electronic formats or improve its quality control on processing orders to assure all appropriate requirements are incorporated.

To recapitulate recommendations made within the body of the report OCC should:

- * Ensure that all necessary information is included in the application, particularly with respect to either the current reservoir pressure or the static water level.
- * Start collecting, point forward for any new permits or in any special area of investigation, an easily accessible list of special permit stipulations.
- * Require fresh water sample locations to be plotted on the AOR map, per the regulations.
- * Determine why enforcement actions have decreased so dramatically over the last three years, and determine corrective action needed to address this.
- * Resume effective enforcement of OCC's regulations and permit conditions.
- * Continue to improve the quality and timeliness of reporting form 7520 and providing all other work-plan reporting requirements.

APPENDIX A
STATE/EPA Staff in Attendance
September 30, 2008
FY 2008 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Patricia Downey	Oklahoma Corporation Commission	(405) 522-2802
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Philip Dellinger	Environmental Protection Agency	(214) 665-8324
Mr. Mike Overbay	Environmental Protection Agency	(214) 665-6482
Mr. Michael Vaughan*	Environmental Protection Agency	(214) 665-7313

* via conference phone

APPENDIX B

Oklahoma Corporation Commission Underground Injection Control Class II Wells Year-end Narrative Work-plan 2008

Activity

UIC inspections were up at 10,267 exceeding our goal of 10,000. Total MIT's performed and witnessed numbered 2,743 exceeding our goal of 2,300.

The UIC Department applications were up at 811 for 2008, 291 disposals 432 injectors, 51 commercial disposals. Approved orders were 215 disposal wells, 254 injectors and 37 commercial wells. Total order dismissals numbered 76.

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	10,267
MITs (total)	2,300	2,743
MITs (Witnessed)	2,300	2,743
Permits (Total Issued)	NA	520
Technical Reviews	NA	811
Operatorship Transfers	NA	694
Technical conferences	NA	517

GIS

UIC is currently downloading the 2008 NAIP (National Agricultural Imaging Program) aerial photos. These are much higher resolution than previous Oklahoma photos and will be very useful to both office and field staff.

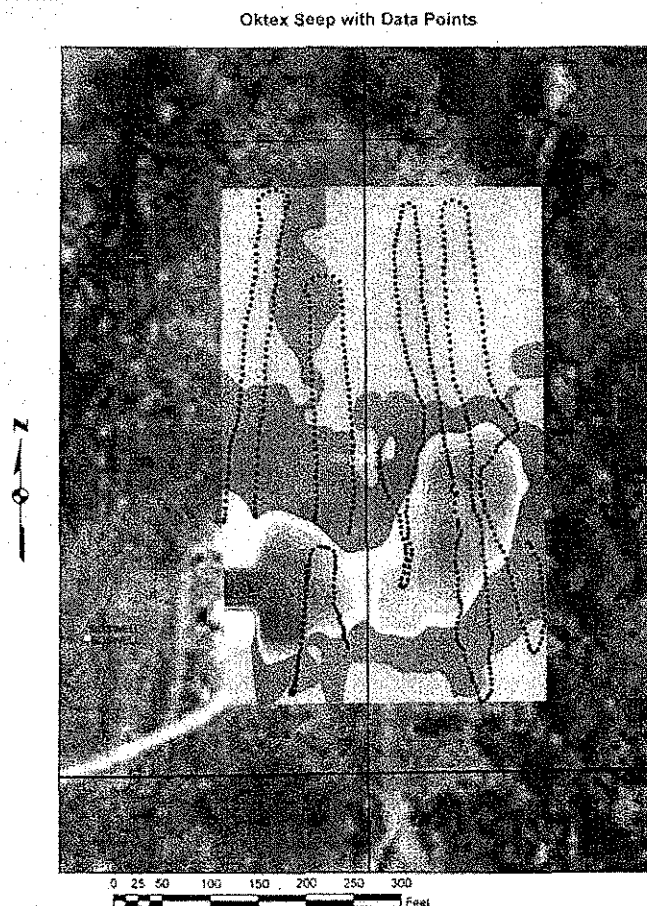
Additionally, with the help of brownfields the OCC is purchasing a two terabyte server dedicated to GIS data. This will allow installation of all high resolution 2008 and archival aerial photos.

Training

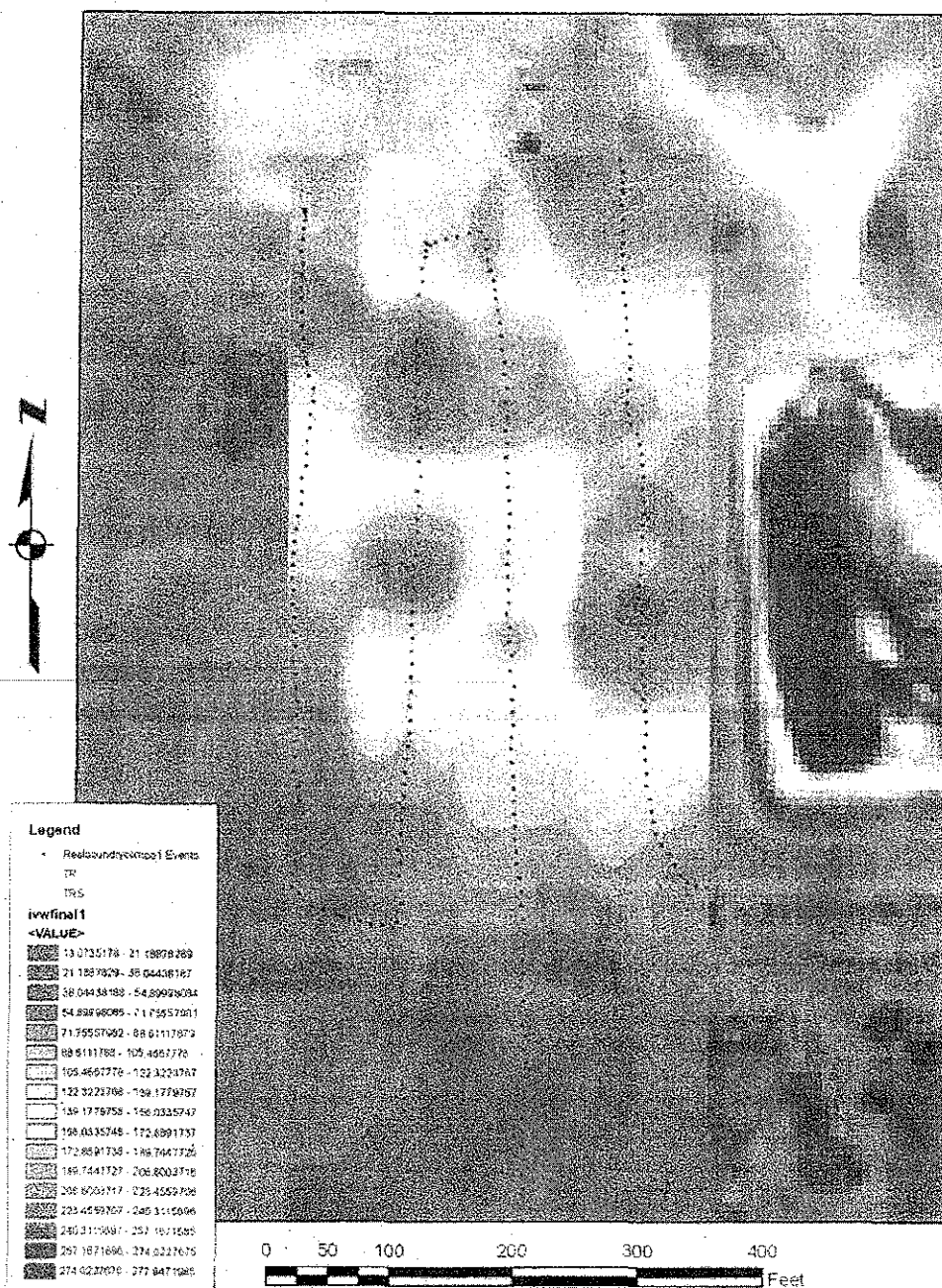
UIC held training classes for the EM-31 (purchased with an EPA/UIC grant) and EM-38 electromagnetic survey tools. These tools are helpful in locating sources of oil field brine. The class was attended by employees of UIC, PA, EPA and Brown fields.

EM Surveys

Thanks to grants supplied by the EPA for the EM31, data recorder, and spatial analyst, the amount of time it takes to survey a site has been reduced considerably. A Survey that before would have taken five man-days to flag, survey, and map, now can be done in one-man day. These surveys are helping to determine sources of pollution and whether the pollution is caused by UIC activity. Two examples of recently completed surveys have been included.



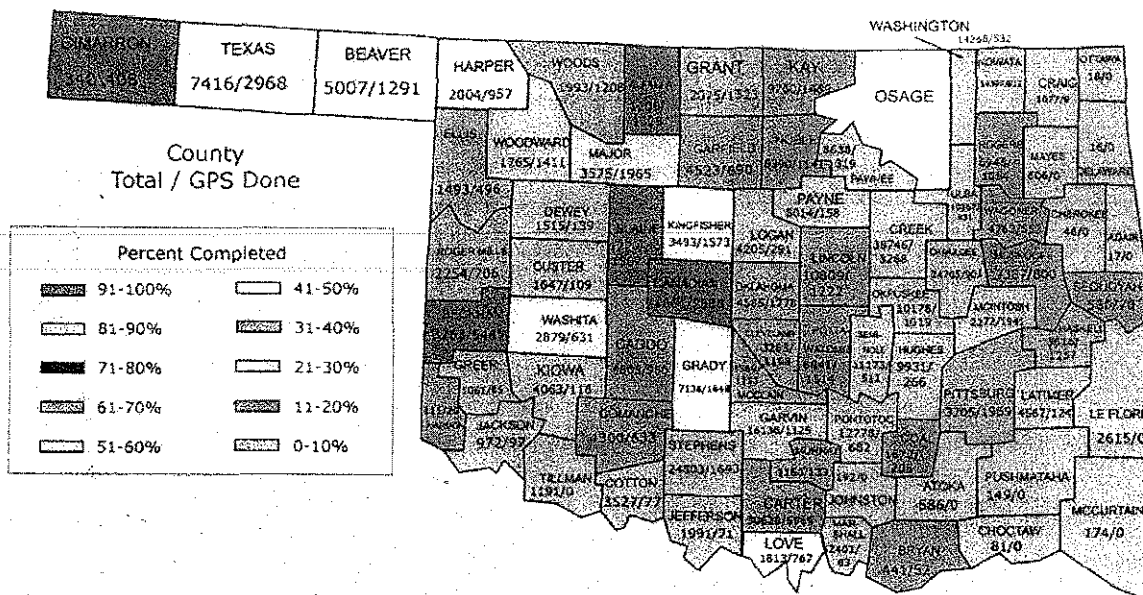
MesaPit



GPS Project

Field Operations has committed to a long-term goal of obtaining a GPS position on all wells in Oklahoma within five years. s. They have completed the second year of this project and have GPS positions on over 73,000 Wells. The data is collected using WGS 84. Quality control for integrating this into our database has yet to be determined.

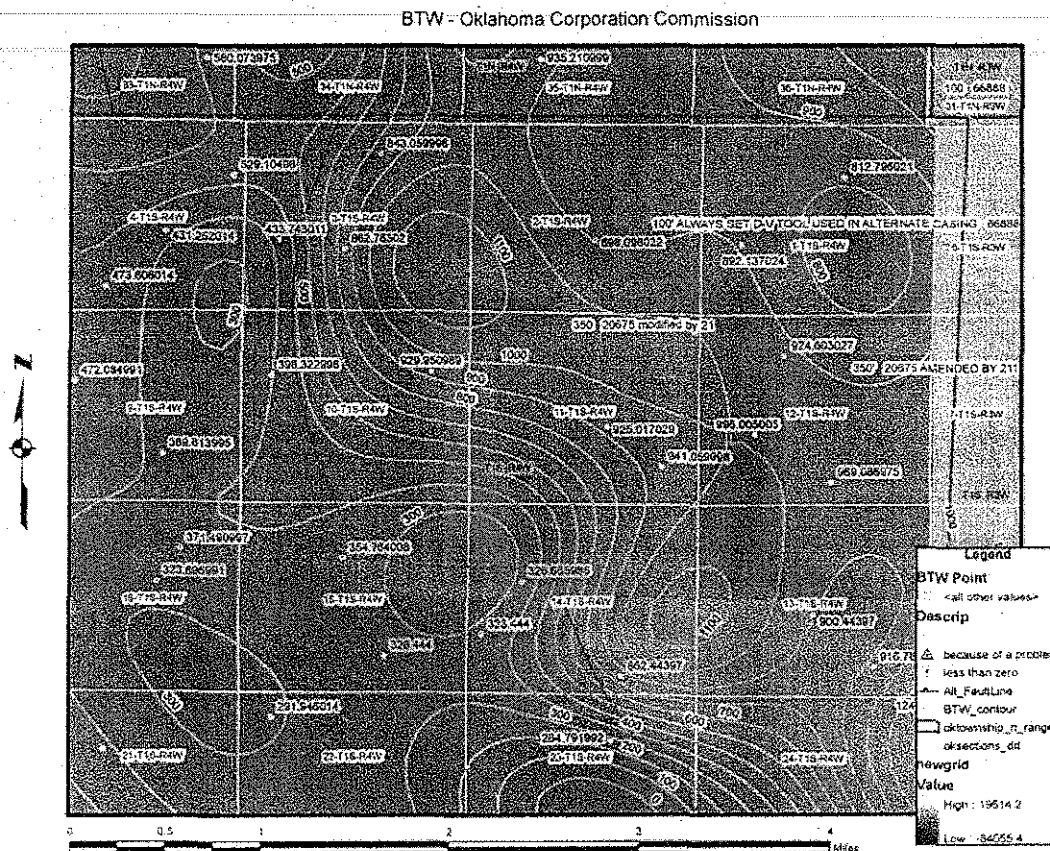
This project has been made possible thanks to an EPA grant providing Laptops for OCC Field Inspectors.



Base of treatable water project

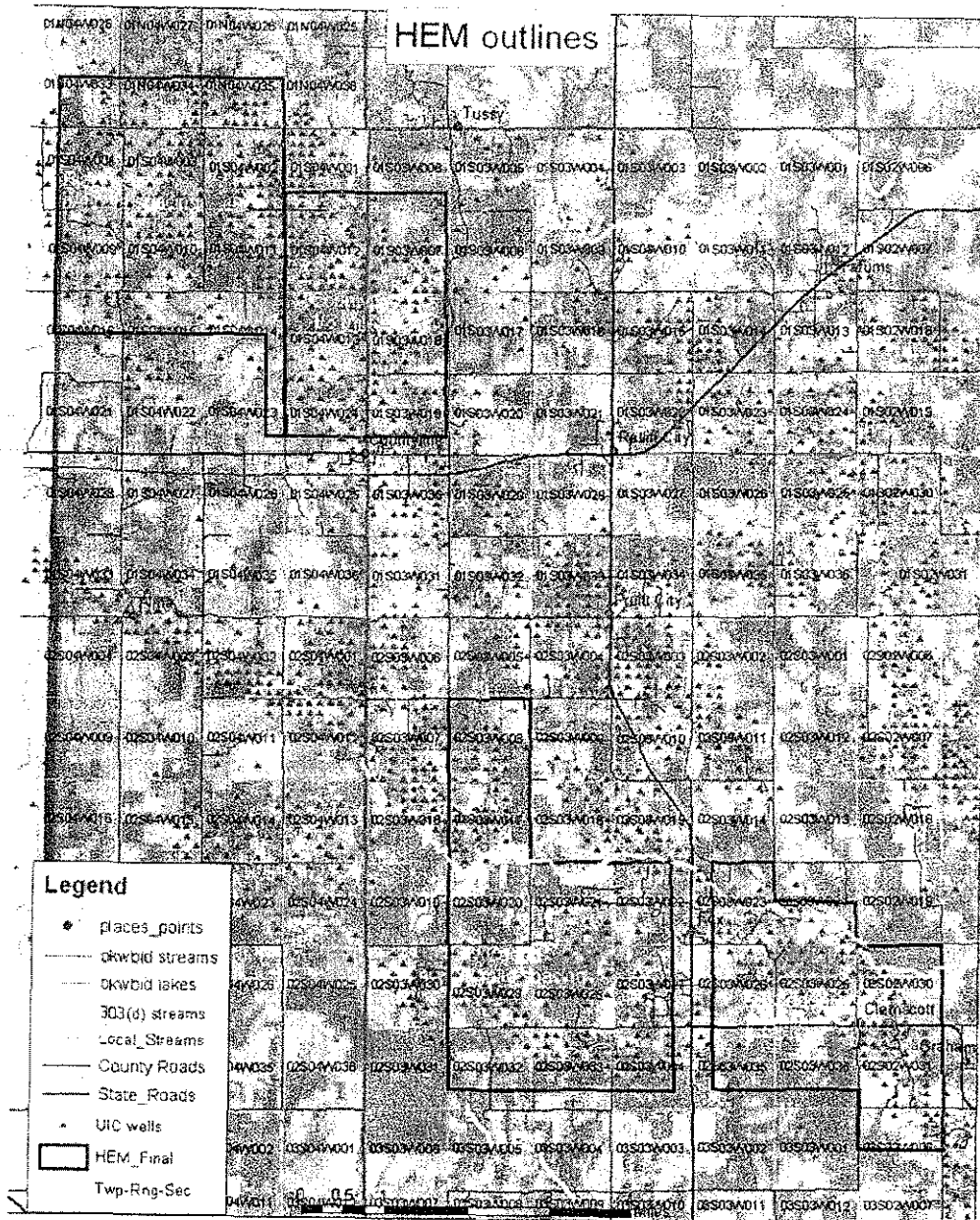
UIC has given GIS support to the Technical Department of the Oil and Gas Division in creating a conversion of the Base of Treatable Water map to a digital format for use with GIS software. This map shows depth to treatable

water in both poly line contour and DEM. It also shows Field Rule areas with the order numbers and special requirements. This will be a great help to office and field staff in determining depth to treatable water and surface casing requirements. With the DEM the field inspector need only use the ID tool to click on a lat long position to give him a consistent and repeatable depth to treatable water.



Helicopter EM survey

UIC special project funding in conjunction with part of a 303d grant, was used to fund the data acquisition and USGS interpretation. OCC is waiting for cross sections to be completed to ground truth survey areas in Stephens and Carter Counties. This data will be used to delineate areas for detailed investigation for possible contamination.



Risk-Based Data Management System (RBDMS)

Implementation of RBDMS is a joint project of the Oklahoma Corporation Commission and the Ground Water Protection Council

RBDMS is a fully relational, normalized PC- and client/server-based information management system that can be used to track comprehensive data on wells and well activities. The RBDMS program also includes many other automated functions, utilities, and standard reports.

The Risk-Based Data Management System (RBDMS) was developed by the Underground Injection Practices Research Foundation (GWPRF) through a grant from the United States Department of Energy (DOE).

Oklahoma Corporation Commission UIC staff will use RBDMS for effectively maintaining and tracking information on Class II injection and disposal wells associated with production operations.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

JUN 16 2010

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2009 (FY09). On November 18, 2009, Ms. Nancy Dorsey, along with Mr. Ray Leissner, and Mr. Michael Vaughan of our Grants Section participated in a phone discussion with Oklahoma Corporation Commission (OCC) Mr. Charles Lord, Mr. Tim Baker and Ms. Patricia Downey about current UIC program implementation. By e-mail on April 5, 2010, we invited OCC's comments on the draft evaluation. This report includes OCC's comments received by e-mail on May 17, 2010.

First, we would like to commend OCC on the innovation and increased productivity with the addition of new members and reorganization of the department, with an overall workforce reduction that is especially impressive. We would also like to commend OCC on several program areas:

- ❖ The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed minimum requirements.
- ❖ OCC showed continued innovation and effective use of special project funding as documented in OCC's Annual UIC Narrative for FY09, (see Appendix B).
- ❖ OCC made a strong push to get the new RBDMS system up and data discrepancies resolved. While not quite complete, OCC made major progress.
- ❖ The acquisitions in the archival photo project are complete. The mammoth task of merging and rectifying the images continues.

The primary issues discussed in this report involve changes in OCC procedures; final permit issues; enforcement trends; and needed program revisions. These were discussed with your staff during the November 18th End-of-Year (EOY) conference call or follow-up e-mail.

With respect to the program revisions, on November 30, 1998, the Oklahoma Corporation Commission (OCC) submitted a draft program revision from Oklahoma's Class II Underground Injection Control (UIC) program as part of an interagency agreement. Subsequently, our agencies worked toward resolution of both scope and authority issues as well as substantial changes to Oklahoma's applicable Class II UIC primacy program pursuant to the requirements of 40 CFR §145.32, in order to assure OCC's Class II primacy program meets Safe Drinking Water Act (SDWA) protection standards.


In addition to the SDWA 1425 primacy revision, OCC and the Oklahoma Department of Environmental Quality (ODEQ) submitted a draft program revision package to Region 6 in June 2000. Subsequent to continued dialogue between EPA, OCC and ODEQ, your agency adopted regulatory revisions in 2005 in consideration of applicable Class V federal permitting requirements. However, issues still exist regarding permitting of Class V wells for aquifer remediation activities associated with leaking aboveground and underground storage tanks.

In the FY08 EOY and again in my February 12, 2009 response to proposed rule making 200900001, I requested your agency submit both outstanding revision packages, neither comment nor packages have been received. I respectfully request these packages to be submitted by July 31, 2010. Please do not hesitate to communicate with us any major hindrance to the package submissions.

Upon receipt of either complete revision package (SDWA 1425 or 1422), Region 6 will evaluate and process the revisions pursuant to 40 CFR §145.32. I thank you and your staff for your efforts in the implementation of this challenging program. I consider our open dialogue a key component of effective communication between our agencies. If you have any questions on the evaluation report or the revision requests, you may contact me at (214) 665-7100, or your staff may call Philip Dellinger of my staff at (214) 665-8324.

Sincerely yours,



 Miguel Flores
Director
Water Quality Protection Division

Enclosure

cc: Charles Lord, OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2009 (FY09)
July 1, 2008 through June 30, 2009**

I. INTRODUCTION

This report is broken into six main sections: [Introduction](#), [Grant Work Plan](#), [Program Revisions](#), [OCC Procedural Changes & Questions](#), [UIC Oversight Issues](#), and [Recommendations](#)¹. Additional information is included in the appendices.

By EPA delegation, the Oklahoma Corporation Commission (OCC) is the lead agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. (This does not match the state delegation—see Program Revisions.) EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2008 and June 30, 2009.

On November 18, 2009, EPA Region 6 representatives spoke with OCC management for EPA's annual end of year (EOY) evaluation (see [Appendix A](#) for attendees). [Appendix B](#) contains OCC's annual narrative required in the FY09 UIC grant work plan.

II. GRANT WORK PLAN

A. FY2009 Grant

EPA approved \$290,500 as the Federal FY09 allotment for the State of Oklahoma's UIC program administered by the OCC, and awarded this amount to OCC in FY2009. In addition, EPA awarded OCC \$90,291 in UIC Special Project Funds in FY2009. Also, please note EPA awarded OCC \$59,513 in UIC special project funds in FY2008, but owing to project delays, carried approximately \$29,191 of these UIC Special Project funds over into FY2009. In FY2009, OCC again could not complete one of their Special Projects and \$38,226.07 was returned. OCC's application was for a total of \$1,047,220 in federal funds.

Work plan Deliverables [Table 1](#) identifies State program updates and other deliverables required during FY09. OCC submitted all quarterly and annual reporting items although several were late:

- o All the 7520s as well as the annual narrative were late.
- o OCC only submitted the terminated injection orders, an attachment to Form 7520-4, for the first quarter.
- o OCC reported no quarterly exceptions this year. A letter listing the single, possible UIC violation in which leakage or discharge into a USDW occurred for FY08 was e-mailed and received January 9, 2009.

¹ Blue, underlined words are hyperlinked for easier electronic navigation. You can add a 'back button' by going to View: Toolbars: Web.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	January 31, 2008 April 30, 2008 July 30, 2008 October 31, 2008	February 2, 2009 May 11, 2009* August 31, 2009* December 7, 2009*
Grant Work plan/Application: FY10	May 1, 2009	May 6, 2009
Annual UIC Narrative Report	August 15, 2009	January 15, 2010
Final Financial Status	September 30, 2009	September 23, 2009
UIC Well Inventory	October 30, 2009 or on request	Part of PAM**
EPA PAM Reporting	Within 7 days of EPA request	On time
Revised QAPP	July 7, 2009 + one extension to September 1, 2009	August 17, 2009

* Without additional information listed in Workplan: quarterly terminations & leakage/discharge to USDW lists; semi-annual SNC summaries.

** Program Activity Measures (PAM)

B. Special Projects

The OCC Narrative in Appendix B describes the status of OCC's special projects for the year.

EPA eventually received a copy of the Brownfield's Pollution Abatement report on their helicopter electromagnetic survey work, a project partially funded by a UIC special project grant in Fiscal Year 07. Despite significant UIC funding, there is no inclusion of injection information in the evaluation of the results aside from a generic statement. EPA is concerned that no assessment of potential injection well contamination was apparently conducted.

OCC Response: Maps of sample sites are being assembled to compare hits on the HEM with stream sampling. EM surveys will be run in June and July of 2010 to ground proof certain areas of interest. Surveys would have been run earlier but for necessary equipment repairs.

III. PROGRAM REVISIONS

In the FY08 EOY and in the February 12, 2009 response to proposed rule making 200900001, EPA requested submission of both outstanding revision packages. EPA has received neither comments nor packages. EPA is disappointed by the lack of progress on this fundamental program issue.

A. Update of Draft Section 1425 Program Revision

Since OCC's submission of a draft Class II UIC program revision package in December 1998, many issues first identified during the region's program review dated December 15, 1997, remain unresolved. Correspondingly, Region 6 responded to OCC's 1998 draft Class II UIC program revision package on April 8, 2004, with a request for additional information on water quality protection standards, area of review effectiveness criteria, financial assurance, and corrective action authorities. While preparing a response to EPA's request, OCC requested multiple deadline extensions including the latest via e-mail on April 14, 2005, offering the end of June 2005 as a qualified answer date. The topic was broached again at the EOY review on September 7, 2007.

Resolution of this longstanding issue is important. OCC's Oil & Gas Conservation Division Director Lori Wrotenbery requested her Manager of Pollution Abatement, Mr. Baker, to review the initial draft response document and to provide EPA with a timeframe in which to expect their revised response.

This was to have been within a month of the July 11, 2007 conference call, though EPA's letter confirming the conversation did not go out until August 10, 2007. EPA received a formal response to the 1425 comments on February 20, 2008. EPA did not reply though, we considered this response did not address the ongoing concerns.

In the FY08 EOY and in my February 12, 2009 to proposed rule making 200900001, Miguel requested OCC submit to ODEQ their portion of a final submittal for the applicable Class V permitting requirements. To date EPA has received no response.

OCC Response: It is difficult for the OCC to respond to EPA concerns on the draft program revision without a formal response. However, it will be the goal of this next state fiscal year to file a program revision package for the 1425 program. The only factor which would prohibit this goal will be budget constraints. If budget constraints become a factor in providing the formal submission of the program revision, EPA Region VI will be notified in writing.

B. Update of Draft Section 1422 Program Revision

In a draft joint program submission with ODEQ dated June 30, 2000, OCC seeks UIC Primacy authority for certain Class V activities: Re-injection of spent brine into the same formation following halogen removal; and aquifer remediation wells associated with leaking petroleum storage tanks. In 2002, at EPA's request, both Agencies submitted regulatory crosswalks that compare applicable State rules and regulations with the corresponding Federal regulations at 40 CFR 144 through 148. Region 6 sent comments to both agencies on May 28, 2002, and as of this report, EPA continues to await resubmission from Oklahoma's UIC Primacy agencies of an amended revision package for SDWA Section 1422 authority. Currently SDWA authorization of all Class V UIC activities lies with ODEQ, not OCC, and will remain so until EPA approves a revision to Oklahoma's applicable program pursuant to 40 CFR Part 145.

After renewed requests by EPA for both program revision packages, Mr. Tim Baker transmitted to Larry Wright in a letter dated August 5, 2005, OCC's proposed regulations for Class V wells under "jurisdiction" of OCC Oil and Gas Division "in response to Region 6 comments received in April, 2002." Those proposed regulations cite applicable Federal UIC regulations regarding applications for a "Class V underground injection well (a brine mining underground injection well)." The wells in question are spent brine return wells following halogen removal [Class V, by rule at 146.5(e)(14)] not Class III brine mining wells. In addition, the rulemaking does not address the Class V aquifer remediation wells associated with AST and UST cleanup operations under OCC Petroleum Storage Tank Division authority, referring only to "brine mining" wells, which are currently under ODEQ jurisdiction. Mr. Baker's transmittal letter indicates that the proposed regulations are in response to EPA's "April 2002" comments. Other issues regarding EPA's crosswalk comments remain to be addressed and resolved.

OCC's Oil & Gas Conservation Division Director requested Mr. Baker on her staff to set up a joint meeting between OCC, ODEQ and EPA to establish a realistic timetable and goals. This was to have taken place within a few weeks of our July 11th 2007, conference call, though EPA's letter confirming the conversation did not go out until August 10th. OCC met with ODEQ on August 24th 2007, to discuss the 1422 status. Following that meeting at, OCC's request, a copy of all related correspondence since 2002 was sent to OCC by the Region. On September 7, 2007, EPA met with OCC's Petroleum Storage Tank Division to discuss their participation in the program revision discussions. The meeting with all parties to discuss the 1422 revision was held December 12, 2007. EPA completed its two action items on December 21, 2007, and is awaiting response from OCC.

In the FY08 EOY and in a February 12, 2009 letter to proposed rule making 200900001, EPA requested OCC submit a complete revision package to us incorporating relevant rule changes pursuant to the requirements of 40 CFR. EPA has received no response.

OCC Response: *The OGCD is working with the Petroleum Storage Tank Division (PSTD) on the structure and organization of the filing of the 1422 program revision. If the organization of oversight can be worked out between the OGCD and the PSTD without a rules hearing and additional budget constraints do not further limit resources, the OGCD plans to submit a revision package to the ODEQ this next state fiscal year. In the event this cannot be accomplished, EPA Region VI will be notified in writing. In addition, EPA will be given notice of the status of the project.*

IV. OCC PROCEDURAL CHANGES & QUESTIONS

Effective July 11, 2009, OCC amended Title 165 Chapter 10 in the Oklahoma Register, changing the permitting process from authorized injection orders signed by the Commissioner, to authorized injection permits signed by the UIC Manager. It appears that both application systems (previous procedure through the Court Clerk's office) and the new one (through Pollution Abatement) are in use. OCC should integrate the tracking aspects of the procedures for searchable public access.

OCC has instituted a number of new, primarily spreadsheet based, systems to improve their tracking ability of the numerous permit applications, emergency orders, application protests, and order stipulations. EPA commends these initiatives and the individuals who created them, and looks forward to their successful implementation and use.

A. Emergency Orders

During a late March 2009 conference call, OCC mentioned a new tickler system for wells with Emergency Permits. Several times during the year, EPA supplied a list of Class II injection wells that have been injecting from a few months to several years under expired emergency permits. A return list showed that some of them received final permits, while others had the applications terminated. EPA has several questions:

- o What does OCC plan with respect to the operators who were/are illegally injecting? Some of the operators injected for almost three years without a valid final permit.

OCC Response: *OCC plans to pursue corrective action in all cases. This action will range from a letter of instruction to writing a ticket or filing contempt depending on gravity of violation.*

- o What changes need to take place, or have taken place, to make the tickler system effective?

OCC Response: *Staff has built an excel spreadsheet that was implemented last fall where our tech support gives notice to the compliance officer of wells with expired emergency orders. The compliance officer will then take appropriate action, if needed, to insure rules and regulations are observed. In the future RBDMS will give notice when an emergency order has expired.*

B. Permit Stipulations

Typical permit stipulations added to an injection permit include requirements to monitor nearby wells, and to run initial and/or periodic radioactive tracer surveys. These are an important part of ensuring ground water protection. EPA is pleased with OCC's special grant project to list all active order stipulations and have them accessible to the inspectors. EPA recommends eventual incorporation of the stipulation data into the main database.

During our review, we identified some wells whose operators may have ignored their Order stipulations (547776, 530351, 547775, 566033, and 528542) and have the following questions.

OCC Response: *Stipulations are entered into data base, and permits are emailed to field inspectors who check for immediate stipulations (wells producing, cementing etc.). At this moment there is not a system to image all evidence of stipulation compliance, but we plan to implement as soon as possible within budgets constraints.*

547776 – Operator had not used the Crooks 4B but is going to plug it.

530351 – CBL for Emery 5 has been submitted and operator will send in letter stating the Della Roberts was not found

547775 – Operator has shot FL and will send in results

566033 – FL shot late last year. Will send in.

528542 – Tracer was run 12-06. Sending it in

- o What action does OCC intend to take against non-compliant operators?

OCC Response: *OCC pursues corrective action when needed.*

- o Is there a penalty for failing to follow an order or permit requirement?

OCC Response: *Yes, actions will be taken if the operator does not follow a permit requirement.*

If the operator is not required to record and/or submit static fluid level measurements, how will the inspector or OCC verify if the static level does indeed comply with the Order? Will the inspector be required to run the static level tests along with the MIT? For example orders: 539613, 532861, 538997.

OCC Response: *539613 – Operator is sending in a letter explaining how he is monitoring the FLs. T. Baker has agreed to consider*

532861 – See 539613 (Same operator)

538997 – FL was shot 4/15. Will scan and email to me.

When is compliance with order/permit stipulations requiring plugging verified?

OCC Response: *Normally at initial MIT. More will be verified as order stipulation project continues.*

What about for wells the order/permit requires to produce, as protection against the pressure reaching problem wells, when is the well status verified?

OCC Response: *At initial MIT and again more will be verified as order stipulation project continues*

C. Annual Reporting

Another system improvement instituted by OCC, is better tracking of F1002 reporting. EPA commends OCC for their efforts to improve their tracking of the numerous permits and related reporting requirements.

EPA understands a comparison of the reported values to permit/order conditions is now taking place. EPA applauds this, especially in light of the increasing number of permits issued with zero pressure when problem wells are present.

D. MIT Signatures

EPA requests the signature validation process for the electronically filed MITs be specified. Some of these appear to have the inspector's signature pasted in over top of the image. Some forms show up in color, but the signature is a white block, for example recent test from June and July for orders: 44403, 41211, and especially 506567, but not for order 370528. Is this an artifact of the inspector's submission?

OCC Response: *Security for signatures is supplied by Topaz software. The FI's signature cannot be imprinted by anyone else and only on the Field Inspector's laptop.*

V. UIC OVERSIGHT ISSUES

EPA has expressed concerns with some aspects of the OCC permit process over the years. These concerns primarily focus on OCC's area of review process, financial surety requirements, permit stipulation tracking, gaps in permit coverage and follow-through.

This year EPA did not systematically review a selection of FY09 UIC permit applications. As OCC is working hard to make the transition to their new RBMS database, EPA perused the existing database for potential problem areas, based on information shared or through website access. Most issues were topics of discussion in previous years, or database related, with one or two specific permits of concern, which are discussed later. As noted earlier, OCC has already worked to improve difficulties arising from expired permits and stipulations.

[Figure 1](#) shows the change in permit applications over the last five years. The number of applications for this fiscal year was significantly down from last year.

A. Permit Review

EPA commends OCC for their effort in attempting to reconcile two disparate databases into a single user-friendly system (RBDMS).

1. Fracture Potential

As discussed in previous years, EPA has concerns over the review of wells requesting permits with a maximum injection pressure above 0.5 psi/ft, which may cause fracturing above the injection horizon. After these discussions, OCC added a Standard Operating Procedure to their Quality Assurance Project Plan. Most of the cases seen in the recent review were before this went into effect. However, rereading the information did bring up a few points for OCC's consideration.

Order exhibits for wells with fracture potential frequently contain fracture treatment reports for a well. This well is generally not the one receiving the permit, and has neither a location provided nor any supporting statement of its acceptability as an analog. In PD200800599, the fracture treatment record sited a well perforated from 654' to 656', during treatment the casing pressure went to 1300 psi. The fractured well was not an injector, so there is no indication of how the casing fared after the treatment.

EPA recommends that any documentation to support an injection pressure at or above 0.5 psi/ft contain appropriately detailed information, in-line with the technical requirements and OCC's QAPP.

2. Simultaneous Injection Wells

165:5-15 (3) (B) Mechanical integrity will be demonstrated by filing annual reports of surface casing pressure, production casing pressure and fluid level.

How does OCC handle reporting for simultaneous injection wells, and how are the permit applications numbered?

OCC Response: *Will have a tracking system in RBDMS for the Simultaneous Injection wells, we have not tracked in the past.*

Are these orders subject to termination if the status of the well changes, specifically if it is no longer simultaneous injection, but pure disposal? For example, Order 177355 Robinson 1-9 (which may no longer be active) has an 1999 F1012 listing the well as exempt from MIT. The initial order

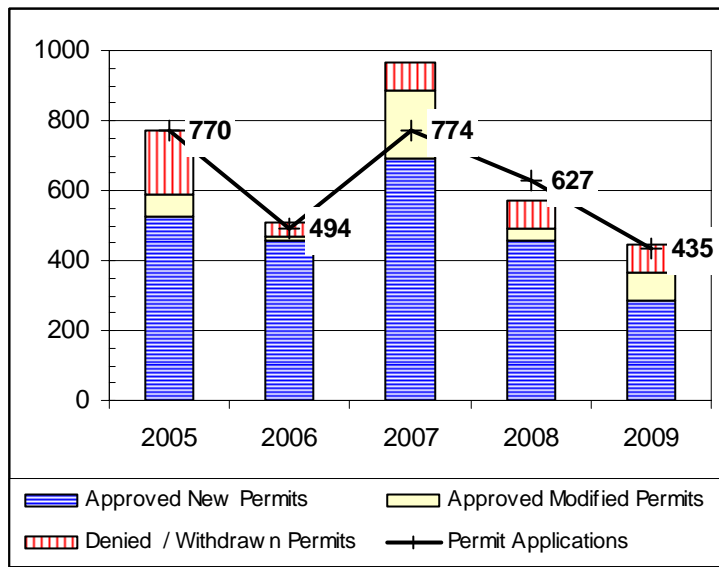


Figure 1: Class II Permitting Actions

was for upper Bartlesville gas production with lower Bartlesville disposal. A 1980 F1002A shows the gas zone as shut in. There is no indication fluid levels were ever reported. Is there a form for operators to supply all the required information?

OCC Response: *The SI order is good, as long as well is configured as permitted, for the life of the well. Only water produced in the well bore of an SI well can legally be disposed in the well.*

3. Application PD200700363, Capstone's Ring 3-7

Last year's EOY report, covered application PD200700363 for Capstone's Ring 3-7 in detail. Since then, the operator received a new permit (556030). An interagency phone conference on March 23, 2009, covered additional details of the case highlighted here:

- o The operator paid a \$2500 fine for injecting without a permit after expiration of Emergency Order 543456.
- o With PD Order 566030 signed March 10, 2009, the injection zone is valid.
 - o The new offset operator had no objections to the proposed permit.
- o "Applicant is required to have radioactive tracer surveys or other tests performed on the subject well on an annual basis."
 - o OCC provided a copy of the pre-injection RAT to EPA. EPA and OCC did not completely agree on the interpretation.
 - o As a result of the tool hanging up in the well, OCC plans to allow an alternate test procedure, but this procedure is not specified.
 - o To justify the above decisions, OCC agreed to provide a copy of the first RAT run in August 2007. If EPA still has concerns, OCC will require a new RAT at the next time schedule to be run with a stationary time drive at 7690'.
 - EPA is still waiting on the RAT from 8/07.
 - OCC Response: *Correct RAT will be sent to EPA.*

4. Public Notice

In last year's EOY report, EPA discussed the difference in interpretation of OCC's public notice requirements with respect to Oklahoma County under OAC 165:5-7-27(d). This section is now under 165:5-5(d), but remains unchanged. EPA suggests OCC clarify the regulation during next year's changes.

5. Supplied Data Issues

In previous years, the EPA reported problems with operators not submitting key permit information, i.e. actual reservoir pressure or measured depth-to-static water level, porosity and permeability. This trend continues. OCC cited the lack of this information, in support of their decision not to run a Zone of Endangering Influence calculation, except where problem wells exist.

EPA understands the OCC's practice, when mud plugged or problem wells are located, is to allow a zero pressure permit. To increase the protection to the USDW, EPA suggests requiring documentation of either a valid bottom hole pressure test or static fluid level as part of the application review, before deciding on granting the permit.

6. Data Review Issues

a) Order 558640, PD 200700542, L Charley Tract 12-17

This order states 'Termination: Authority to inject shall terminate if: "f) Operator will not replug Bird Creek Unit, L. Charley #15 located. On enquiry of the Charley 15 well status, OCC staff responded the well neither was replugged, nor should be per the permit.

This is an excellent example of an unclear order combined with a record problem: there is no exhibit package to clarify the solution. However, there is a Form F1003 for Lemuel Charley 15, at the specified location, showing it was mud plugged in 1925, which lends support to EPA's interpretation that replugging L. Charley 15 is required by the permit. As the Charley 12-17 is not actually injecting, the stipulation itself is not the issue at this time. However, having all parties have a clear understanding of all parts of any Order is of paramount concern.

Order 558640 appears unenforceable.

OCC Response: *This is being investigated by our compliance officer.*

b) Order 548227, PD 200600238, Oktex Boswell #3

There appear to be a number of issues that slipped by in this order. This was a contested permit with court hearing. The ALJ's specific recommendations for monitoring the pressure were not included in the permit stipulations.

Numerous certified and sworn errors of the Oktex president are in the exhibit package (EXHATT) and hearing report (IHREPT). For example, the Affidavit where Mr. Robinson swore "That I made a reasonable and diligent search to discover any fresh water wells within one (1) mile of the Boswell #3 SWD Well, including via available online sources, The OWRB online well search identifies two domestic water wells within 1 mile.

In the Hearing Report Mr. Robinson claims his innocence of the illegal injection, which OCC had discovered previously. Yet, he alternately testified that it was a producing well, and that he thought it was a disposal well.

Mr. Goode (the oil & gas consultant) testified that the well will take water on a vacuum, yet the application and amended applications list 175 psi formation pressure. There is a handwritten note in the exhibits that the base treatable water is at 680' and the fluid level is at 360'. A 360' static fluid level, gives a reservoir pressure around 700 psi.

OCC identified two problem wells within a 1/4 mile and did not directly bring these up in the hearing (from the report). The consultant testified, "The Maggie No. 1, the dry hole in the SW section of Section 17, has no plugging report on record. It was a dry hole. There is a concern if the pressure increased on the Boswell No. 3 disposal well, especially anything above 25 to 30 pounds. The Maggie No. 1 was probably plugged with cement, as there is no surface pipe in the well. It was probably cemented 300 to 400 feet to the surface and that should protect the fresh water resource in the area." The Maggie 1 (051-21291) F1002A (completion) record states there was no casing run or cement set.

The 1980 dry hole Boswell 4 (051-21069) was also without casing or cement run per the completion report. It did however have a plugging report, it is mud plugged between 300 to 2360', with cement from 300' to surface. Note that the Base of Treatable Water is 650'. There is no discussion recorded of this problem well in the hearing record.

The ALJ recommended that the permit should be granted with the following provisions:

- Injection pressure of '0' and must be monitored on a monthly basis.

- Monitoring to be conducted by operator and OCC field inspector.
- Monitoring to be reported to OCC, and the field inspector to inspect the pressure gauge to determine the injection pressure.
- Include the three specifications of OCC's witness:
 - additional downhole perforations (never specified)
 - submission of cement bond log (CBL) run from 780' to surface
 - Form F1073 showing Oktex as bonded purchaser

The well did not have a pressure gauge at the time of the hearing. The final permit does not require one, nor does it require any of the ALJ's recommendations on pressure and monitoring. The permit did require running and filing a CBL log, as well as the three OCC witness specifications. Was a CBL run and submitted? No recompletion for the required change in the well's perforation interval has been scanned.

The operator since sold the well, which has other compliance issues that the new owner was apparently unaware of at the time of purchase.

OCC Response: UIC's compliance officer has written a demand letter requiring the current operator to run a bond log or supply a copy of the cement bond log to prevent his well will being shut-in.

c) Order 558173, PD200800297, Votravis 1-7 SWD

The authority for the type of well is inconsistent. The original application requested a commercial permit, while the amended application requested a disposal permit. The order is for a 'commercial disposal well', however, the order terminates (10a) if "The well is used for commercial disposal."

The order also requires a stipulation: "Plug or provide proof that the Courts Shelton 1 well located SE SE NW 7-7N-18E is plugged properly from 160 feet to surface." Well records for the Courts Shelton 1 were found under location search for API 00000000; F1002A 3/31/1934 and F1003 5/11/42—a well plugged in 1942 is unlikely to meet today's accepted standards.

There is no scanned drilling permit for the Votravis 1-7. EPA understands it has not yet been drilled and has until February 2010 to be drilled, pass the MIT and the other well plugged. However, the permit will still be unusable. What actions will be/have been taken to resolve this?

OCC Response: If the well has not met its timeline for compliance, the order will be vacated. Vacating orders and dismissing old or invalid applications is something UIC does annually to semiannually.

7. Database Issues

Reconciliation of three database issues is required between the two OCC database systems for UIC and Oil & Gas, before RBDMS can be populated. These issues are

1. New well pluggings
2. Existing operators
3. Disconnect between UIC permits and completion permits

A number of unit wells either never had their MITs scanned or the identifying information was not entered. Searches of the online image system for Milroy Deese Unit or NE Fitts well F1075s by location, well name, order or API number came up blank.

In the case of the PD 200600238 discussed above, the exhibit package and protest letters where date stamped (1/11/08) after the permit was granted (12/26/07). Presumably, the documents were stamped when taken down to be filed, however this gives the erroneous impression that the hearing (9/19/07) was held before the protests were actually received.

8. Effective Surveillance & Enforcement

OCC's EPA reporting Form 7520-3 shows many null values. It suggests to anyone viewing the results (Table 2), that OCC does not witness UIC well construction, plugging or answer complaints. OCC maintains the problem is related to communication of data between its district and central office; however, EPA remains concerned with inaccurately reported data.

Table 2. Inspections

Inspections:	2005	2006	2007	2008	2009
Wells with	11,365	15,439	11,914	9,727	11,649
Construction witnessed	0	0	0	0	0
Complaint/Emergency Responses	0	0	0	0	0
Plugging witnessed	131	0	0	0	0
MIT witnessed	2,952	2,446	2,335	2,793	2,623
Routine / Periodic	8,413	12,993	9,579	6,934	9,026
Sum elements	11,496	15,439	11,914	9,727	11,649

OCC Response: *It is not cost effective to pull construction witnessed data from our database because an overwhelming number of UIC wells begin life as oil or gas wells.*

Field ops and district offices receive complaints and makes requests for assistance (ROA) from UIC. These are not tracked by UIC. Nor will UIC have an emergency response, as Field Ops are our first responders. We will, however, begin tracking complaints and ROA's that have a "possible" UIC component, whether they do or not. This will be tracked with an excel spreadsheet until it can be implemented into RBDMS.

Almost all UIC wells orders are terminated before they are plugged and are not listed as UIC wells at time of plugging.

OCC reported the Jones 5 BDSP as a Significant Non-Compliant well. EPA used this investigation as a training case for a relatively new staff member. The staff member is currently on a six-month detail, so a final report is not available. However, after a review of the communications, OCC's actions and a visit to the site, EPA agrees with OCC's actions. EPA also forwarded case information to the Spill Prevention group for consideration under federal rules.

OCC Response: *Well has been plugged.*

9. Brine Complaint Response

The various EPA grant funded electromagnetic surveys continue to be popular with the districts in response to brine complaints.

Order 397841, Williams 9

In response to a citizen complaint, EPA accompanied OCC during part of their investigation of brine contaminated water wells in Creek County. Potential problems identified during the investigation included old brine pits, a producing well without surety, mud plugged wells, poorly written old UIC order and possible issues with that injector just under a ½ mile away.

A brine plume has affected several water wells in 22-18N-8E SW SW, Creek County. OCC identified two or three mud-plugged wells in the immediate vicinity from records. To expedite shutting off potential conduits, OCC plugged the wells (Catch 1 and 2 in October 2009) and listed the sites with OERB for surface clean-up.

The Williams 9 is the closest active injection well, order (397841). The order signed in 12/8/1995, contains the following unclear stipulations:

- o "This order shall become null and void if the following wells are plugged and abandoned:
 1. Williams #3, SE NW NE 27-18N-8E
 2. Williams #4, E/2 NE NW 27-18N-8E
 3. Williams #2, NE SW NE 27-18N-8E
 4. Williams #12*, SW NW NE 27-18N-8E"

*Entry four is difficult to read



Figure 2: Williams 4

Three out of four of the above wells are abandoned, but not plugged. The three (Williams 2, 3, &4) are still registered to Taylor International. During a joint site visit on May 15, 2009, we located the Williams 4 (at E/2 NW NE 27-18N-8E), see Figure 2, but could not find Williams 2 and 3 (casing pulled in 1930). The Williams 12, registered to Whitehead, is a producing oil well located at NW NW NE 27-18N-8E. (FYI, the Oil & Gas Database record is 'misfiled' under 7E.)

After the Williams 9 measured a static water level at surface for two days in a row, the operator was encouraged to submit a permit modification request, to recomplete the well into a deeper zone. The operator then submitted an application for administrative approval, (F1015A, PD200900123) and a motion for an emergency order. OCC identified a mud plugged well within the ¼ mile AOR, during review of the application, (per phone conversation). The operator stopped supplying required information and the application has stalled. Order 567065 dismissed the emergency order request. The well continues to inject in the original over-pressured zone, with mud-plugged wells within the area of pressure influence.

This area was drilled primarily in the 30's and 50's, with surface casing set between 150' and 200'. The base treatable water is 600'. Using average Layton porosity (17%) and permeability (18 md) from Osage County as the information is typically blank on OCC applications, a zone of endangering influence was calculated at 6.6 miles against a brine filled well, Appendix ____.

Considering all the circumstances, EPA is very concerned that OCC allows continued injection in the Williams 9, with an inadequate permit, and numerous wells of concern in an overpressured zone.

OCC Response: UIC's Compliance officer has written a demand letter requiring the operator of Williams #9 to shoot fluid levels on the following wells.

1. Williams #3, SE NW NE 27-18N-8E
2. Williams #4, E/2 NE NW 27-18N-8E
3. Williams #2, NE SW NE 27-18N-8E
4. Williams #12*, SW NW NE 27-18N-8E"

10. Mechanical Integrity Tests

OCC continues to annually conduct and witness (Appendix B) mechanical integrity tests for far greater than 20% of the inventoried injection wells, as required to meet the maximum five-year testing frequency for each well. OCC is again highly commended for this accomplishment and for witnessing all MITs. [Figure 3](#) shows the number of MITs witnessed, failed or violations, as well as any radioactive tracers (RAT) run. MIT failures include not testing on schedule and tests with significant leaks, but exclude those tests that subsequently passed the MIT after a failed test.

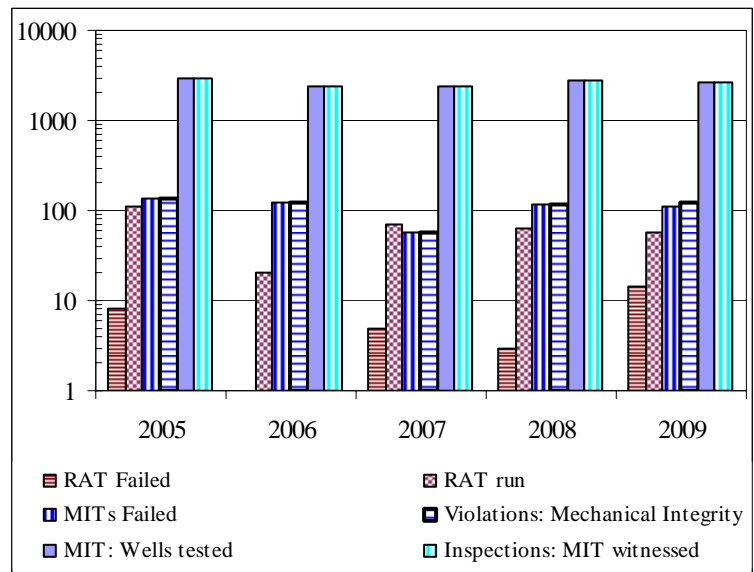


Figure 3. MIT & RAT Results

EPA commends OCC for getting the 2009 MITs (F1075) scanned and into the online system with all the API and Order numbers entered to facilitate locating the records. However, it would be helpful if the legal location and well name were included. Was there a decision not to include this information? Well names and locations are also missing from a large number of 2007 and 2008 scans. EPA understands there is still a large backlog of unscanned MITs from previous years. OCC Response: *RBDMS indexes everything off API number.*

One scanned MIT contains what we hope is only a typo, otherwise the MIT was not in accordance with either OCC rules for testing or fracture propagation, nor for permit considerations. Order 545517 for the Evan Collins UEDL 3 specifies a 0 psi maximum pressure, due to six mud plugged wells in the immediate vicinity of the 500 to 520 injection interval. The 4/7/08 MIT shows the test was conducted at 500 psi, this is out of line with normal OCC requirements. OCC Response: *Initial test should have been 300 psi even if permitted at zero pressure.*

11. Enforcement Actions

Figure 4 shows the number of overall enforcement actions reported in the Form 7520. (Year 2004 reflects a reporting error.) This figure also shows the percent of violations given a Notice of Violation (NOV), and the percent of enforcement actions past the NOV. Since 2006, the number of actions is significantly lower without a corresponding drop in inventory.

Figure 5 shows the NOVs and kind of enforcement actions taken. There was a significant drop in reported administrative orders and consent agreements. Even allowing for a difference in reporting method, the number of these actions has been steadily dropping in comparison to the total violations.

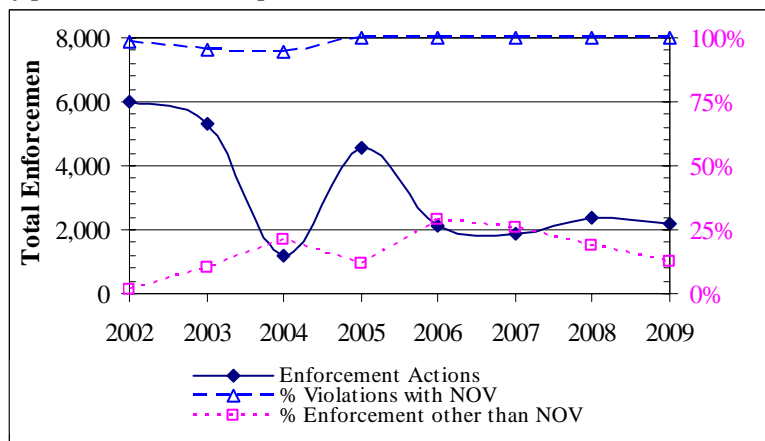


Figure 4. Overall Enforcement Actions

OCC Response: *Changes in UIC's enforcement personnel and tracking methods has increased the number of notifications and enforcement actions in 2010.*

VI. SUMMARY AND RECOMMENDATIONS

EPA commends OCC for witnessing all mechanical integrity tests, far exceeding the EPA minimum recommended standard of 25%. In this last fiscal year, OCC once again received a combined hit of increased workload and decreased staff. The result has been general difficulty in keeping up with the necessary workload. However, in some areas there has been improvement through new assignments and innovation. EPA commends OCC for their efforts in bringing RBDMS on-line.

It is imperative that OCC submit both program revision packages for the Class II and Class V wells for review to EPA.

This year several major permitting problems were uncovered. While one or two can slip through in any agency with a high volume of permits, EPA recommends OCC review their procedures to find ways to resolve the cause of these occurrences. EPA also recommends that OCC take action to fix the critical problems discussed earlier.

To recapitulate recommendations made within the body of the report OCC should:

- * Ensure that all necessary information is included in the application, particularly with respect to either the current reservoir pressure or the static water level.
 - o For applications where problem wells are identified, require acquisition of a properly documented bottom hole pressure or a static water level.
 - o If the top of static water level is within the USDW, require either well treatment or a different reservoir to protect the USDW.
 - o For injection pressure requests over 0.5 psi/ft, require complete documentation according to OCC's SOP—particularly not accepting fracture treatment statements that do not meet the requirements, have no location, or are not an acceptable analog.
- * Determine innovations needed to discover & resolve areas of critical permitting problems:
 - o All permits should be completely clear and written to be enforceable. If on review, past permits are discovered, which are not enforceable, OCC should require an amended permit—the new permitting system should facilitate this.
 - o In areas where there is a clear problem injection activities, fluid to surface, problem wells and problems with brine contamination to surface or not, OCC should exercise its authority to protect the USDW.
 - o In cases where brine problems are discovered in an active injection area, OCC should require the operator or responsible party to plug problem wells.
- * Determine why reported enforcement actions have decreased so dramatically over the last four years, and determine corrective action needed to address this.
- * Have effective enforcement of OCC's regulations and permit conditions:

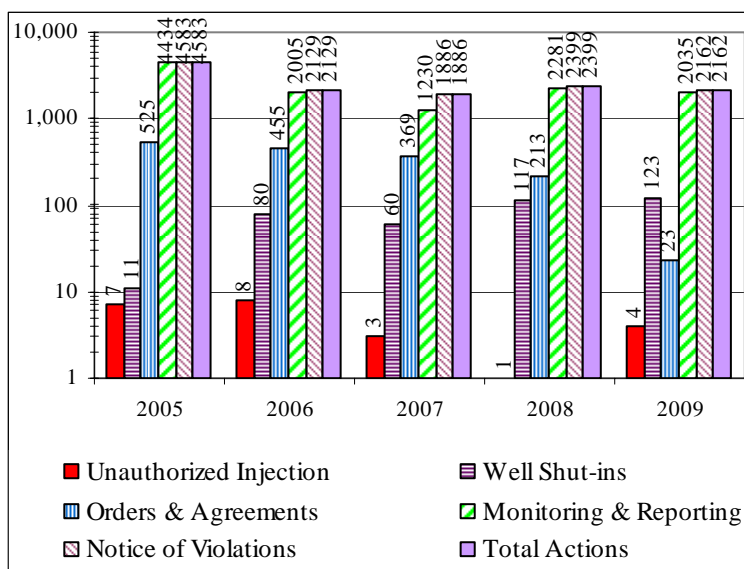


Figure 5. Kind of Enforcement

- Make full use of the new Emergency Order and Stipulation tracking systems.
- Appropriately fine all operators who fail to follow OCC rules, especially:
 - * injecting after an emergency order has expired, before receiving a final permit;
 - * failing to follow Order/Permit stipulations;
 - * or injecting at over the permitted pressure.
- * Improve the quality and timeliness of reporting form 7520 and providing all other work-plan reporting requirements.
- * Complete all Special Grant Projects within the year granted.

APPENDIX A
STATE/EPA Staff via conference call
November 18, 2009
FY 2009 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Patricia Downey	Oklahoma Corporation Commission	(405) 522-2802
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Ray Leissner	Environmental Protection Agency	(214) 665-7183
Mr. Michael Vaughan	Environmental Protection Agency	(214) 665-7313

APPENDIX B
Oklahoma Corporation Commission
Underground Injection Control
Class II Wells
Year-end Narrative
Work-plan 2009

Oklahoma Corporation Commission implemented a successful Program in FY 09 meeting or exceeding established targets as determined in Work-plan 2008. The attached "Annual Report Card" depicts a summary of activities.

UIC inspections for 2009 were up from 10,267 to 11,642. Total UIC applications were at 435 for the year, 229 Disposals and 206 Injectors. Total for approved orders was 156 disposals and 130 injectors and total order dismissals numbered 82.

Field Operations is still collecting GPS data for UIC facilities in all four Districts. This is part of Field Operations long-term goal of obtaining a GPS position on all UIC wells within five years.

UIC began the Well Location Project which utilizes the GPS well location data from the districts. The purpose of project is to examine oil and gas well locations to determine if the approximate well locations were true to within a 50 feet from preexisting maps. To date, 24,621 well locations have been examined spanning 49 counties. Of these, 1663 locations have been corrected, with the updated map covering 63% of the state.

In the area of GIS, UIC has completed the OCC aerial photo library. We are current on all aerial photos from the NAIP. At this time we have county wide aerial photos for the years 1995, 2003, 2004, 2005, 2006 and 2008 in all 77 counties. Updated maps with well data current to 11/04/2009 should be in the hands of our field inspectors by the end of January of 2010. All of this data we have made available to the EPA.

In addition to the aerial photos from NAIP, the georeferencing of archival photos is ongoing. Our Brownfields program continued the georeferencing project after UIC's special project had expired. Thanks to renewed special project funding UIC is able to continue this project until 6/30/2010.

All archival photos (primarily from the 1940's) available at the Oklahoma State Library have been scanned and saved to the R Drive. Subsequent georeferencing of these photos produces a continuous historic map of this time frame. This map provides a more precise determination of well locations and a more detailed record past surface pollution. Currently, 5 counties are referenced in their entirety.

The OCC, Oil and Gas Conservation Division has committed to converting to the RBDMS database. We have a projected conversion to the system for the Oil and Gas Division by 06/30/2010.

Entity\Bond was released for use in November, 2009. We are currently working thru some bugs and glitches, but hope to have it fully functional soon. The Wells_Module is in its 3rd release leaving only some data cleanup left to do. We also hope to release E-Inspect which is now in the developmental stage with user testing to begin in January. We hope to release Wells_Module and E-Inspect together for final user acceptance and release. UIC is the reason for RBDMS and we hope to start testing on it in late February or early March with final release coming in May. We will then release E-Commerce which will be our data mining application by mid-August.

UIC has stepped up it's compliance effort with respect to the annual injection reporting. We currently have received 98.6% of the 2008 1012A forms (Annual Fluid Injection Reports) from operators in Oklahoma. UIC has built an excel spreadsheet including every well and operator who had not submitted these forms after the second notice. Also included are unsubmitted 1012As with overdue MITs

from all operators back to 2004. Starting in September 2009 all these operators were called and notified their wells were out of compliance. In early December the remaining operators were notified again by letter of fines and possible order terminations. In January 2010 action will be taken against any operator non compliant for 1012A submission and the orders of abandoned wells will be terminated.

To assist in this effort our compliance officer has been given authority to write tickets for UIC violations. This will speed up the enforcement process and give UIC a disciplinary action just short of a contempt citation.

The Order Stipulation Project was underway in spring 2009. In this project, UIC orders from each county are reviewed for any existing stipulation. They are then recorded in Excel spreadsheets and made available to the field inspectors. This project has proven to be highly beneficial to UIC personnel and the OCC legal department is now continuing the research utilizing their interns. UIC will apply for another grant to continue the project with additional temporary employees.

The Document Imaging Project was successful. Approximately 75% of the well records in District I have been imaged and made available in their office and to inspectors in the field. Special project funds has made possible a continuation of the project and we will be taking bids to complete imaging in District I and then move on to District IV.

Our new permitting system is has been implemented and images of the current permits are available on our OCC website in imaging.

**Annual Report Card
UIC Program Activities
Work-plan 2007
(7-1-09 through 6-30-09)**

December 22, 2009

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	11,649
MITs (total)	2,300	2,623
MITs (Witnessed)	2,300	2,623
Permits (Total Issued)	NA	286
Technical Reviews	NA	483
Operatorship Transfers	NA	379
Technical conferences	NA	352

EM surveys have continued to be an instrumental part of our UIC pollution investigations. For example, the contamination source of a water well in Logan County was determined with an extensive EM 34 survey as well as 1951 archival photos of the area. The source of the pollution was determined to be a leaking pit in a pasture to the south of the well. The case was referred to OERB who will remove the old pit. Archival photos and results of the EM survey are provided.

We experienced two brine breakouts in 2009.

The first was located in Carter County Oklahoma in Section 23-T04S-R03W in the Healon V unit. In technical meetings with the two operators in this section it was decided to file an application for remediation. After approximately 160 man hours of field work, case preparation, mapping, and three days of hearings the OCC administrative law judge ordered the plugging of Jones #5 Commercial

Disposal well. The Operator of this well, BDSP Inc. appealed to Commission court referee and lost. BDSP then appealed to the Commissioners and will be required to plug the Jones #5.

Since the Jones 5 has been shut-in, the purging in this area has ceased.

The second purge to surface occurred in Hughes County Oklahoma in Section 4-T05N-R11E in a mudplugged well called the Edward McClain #1. After flow to surface was discovered the commission ordered a commercial disposal well, the Anderson #1, in section 8-T05N-R11E be shut in. The original operator of the Edward McClain well was contacted and on their own initiative plugged the Edward McClain #1.

There has been no additional problems in this area since the plugging of the McClain well. However, UIC will not approve any additional disposal wells in the Bartlesville formation in a three mile radius surrounding the Anderson #1 until further studies can be done. In this instance, all parties cooperated and no time has been spent in court. Field work, mapping, and technical meetings totaled approximately 60 man hours.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

MAY 2 2011

Ms. Lori Wrotenbery, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Ms. Wrotenbery:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2010 (FY10). On September 15, 2010, Ms. Nancy Dorsey met with Oklahoma Corporation Commission (OCC) representatives Mr. Charles Lord, Mr. Tim Baker and Ms. Patricia Downey to discuss current UIC program implementation. Mr. Michael Vaughan (via phone) of EPA's Grants Section participated for the grants discussion on September 21, 2010. By e-mail on December 15, 2010, we invited OCC's comments on the draft evaluation. This report considers OCC's comments received by e-mail on February 3, 2011.

First, we would like to commend OCC on the continued and streamlined productivity of the department. We would also like to commend OCC on several program areas:

- ❖ The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed minimum requirements.
- ❖ Well handled brine contamination investigations.
- ❖ OCC showed continued innovation and effective use of special project funding as documented in OCC's Annual UIC Narrative for FY09, (see Appendix B).
- ❖ The initial RBDMS modules are up, with considerable unseen effort made to combine to disparate well database systems.
- ❖ The combination of improved information tracking and enforcement initiative has greatly increased operator compliance in reporting.

The primary issues discussed in this report involve changes in OCC procedures; review methods; quality assurance procedures; and needed program revisions. These were discussed with your staff during the September 15th End-of-Year (EOY) conference or follow-up e-mail.

Oklahoma Corporation Commission (OCC) initially submitted their draft SDWA 1425 primacy revision package covering changes to the Class II Underground Injection Control (UIC) program, on November 30, 1998. Following efforts were ineffective in reaching resolution. EPA requests a new draft submission to cover all changes from Oklahoma's applicable Class II UIC primacy program pursuant to the requirements of 40 CFR §145.32, in order to assure OCC's Class II primacy program meets Safe Drinking Water Act (SDWA) protection standards.

Ms. Lori Wrotenbery

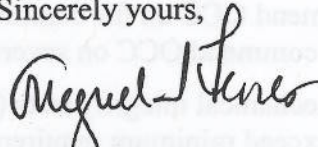
Page 2

In addition, OCC and the Oklahoma Department of Environmental Quality (ODEQ) submitted the draft SDWA 1422 primacy revision package to Region 6 in June 2000. Subsequently, changes to both EPA's Class V federal permitting requirements and Oklahoma's program took place. ODEQ has their submission ready, but the package requires revisions from OCC Oil and Gas Division (Class V brine recovery operations) and the Petroleum Storage Tank Division (Class V wells for aquifer remediation activities associated with leaking aboveground and underground storage tanks).

Oklahoma is one of the states selected for a Headquarters Part 147 update pilot project. As such, the program revision packages will be receiving high-level attention within both Oklahoma government and the EPA hierarchy. Please do not hesitate to communicate with us any major hindrance to the package submissions. Upon receipt of either complete revision package (SDWA 1425 or 1422), Region 6 will evaluate and process the revisions pursuant to 40 CFR §145.32.

I thank you and your staff for your efforts in the implementation of this challenging program. I consider our open dialogue a key component of effective communication between our agencies. If you have any questions on the evaluation report or the revision requests, you may contact me at (214) 665-7100, or your staff may call Stacey Dwyer or Philip Dellinger of my staff at (214) 665-7150.

Sincerely yours,



Miguel I. Flores
Director

Water Quality Protection Division

Enclosure

cc: Charles Lord, OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2010 (FY10)
July 1, 2009 through June 30, 2010**

I. INTRODUCTION

This report is broken into six main sections: [Introduction](#), [Grant Work Plan](#), [Program Revisions](#), [OCC Procedural Areas](#), [UIC Oversight Issues](#), and [Summary and Recommendations](#)¹. Additional information is included in the appendices.

By EPA delegation, the Oklahoma Corporation Commission (OCC) is the lead agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. (This does not match the state delegation—see Program Revisions.) EPA maintains authority for Class I, III, IV and V on all Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2009 and June 30, 2010.

On September 15, 2010, EPA Region 6 representatives spoke with OCC management for EPA's annual end of year (EOY) evaluation. The September 21, 2010, teleconference covered the grants portion of the EOY. (See [Appendix A](#) for attendees of both conferences). [Appendix B](#) contains OCC's annual narrative required in the FY10 UIC grant work plan.

II. GRANT WORK PLAN

A. FY2010 Grant

OCC's FY2010 application was for a total of \$1,047,220 in Federal funds. EPA approved \$289,000 as the Federal 2010 allotment for the State of Oklahoma's UIC program administered by the OCC, and awarded this amount to OCC in FY2010. In addition, EPA awarded OCC \$56,528 in UIC Special Project funds in 2010:

- \$43,122 in general UIC Special Project funds,
- \$4,306 in UIC Special Project travel funds to attend the Fall 2009 "Cased Hole and Production Log Training", and
- \$9,100 in UIC Special Project funds carried over from FY2009 to allow OCC to complete their project work.

Work plan Deliverables—[Table 1](#) identifies State program updates and other deliverables required during FY10. OCC submitted most quarterly and annual reporting items although several were late:

- Most of the 7520's, the quarterly lists of terminated injection orders and the annual narrative were late.

¹ Blue, underlined words are hyperlinked for easier electronic navigation. You can add a 'back button' by going to View: Toolbars: Web.

- A letter received June 9, 2010 listed the single, possible UIC violation in which leakage or discharge took place into a USDW. No significant noncompliance (SNC) took place as OCC had taken action before the end of that quarter.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	January 30, 2010 April 30, 2010 July 30, 2010 October 30, 2010	February 25, 2010* June 11, 2010* August 9, 2010* December 09, 2010
Grant Work plan/Application: FY10	May 1, 2009	May 6, 2009
Annual UIC Narrative Report	August 15, 2010	October 1, 2010
Final Financial Status	September 30, 2010	September 7, 2010
UIC Well Inventory	October 30, 2009 or on request	On time, Part of PAM**
EPA PAM Reporting	Within 7 days of EPA request	On time
Revised QAPP	Extended to Nov. 2, 2009	Approved Oct. 6, 2009

* Without additional information listed in Workplan: quarterly terminations & leakage/discharge to USDW lists; semi-annual SNC summaries.

** Program Activity Measures (PAM)

B. Special Projects

EPA commends OCC on their continuing commitment to improving their information resource base through Special Project initiatives, such as the Well Location Project; georeferenced archival aerial photos; Document Imaging; and attending the Cased Hole and Production Log Analysis Training. The OCC Narrative in [Appendix B](#) describes the status of OCC's special projects for the year.

III. PROGRAM REVISIONS

Progress on longstanding program revision issues appears to be forthcoming, as both EPA and OCC have committed to recommencing efforts to update the 1425 and 1422 programs for the 40 CFR Part 147 submissions. EPA provided copies of the appropriate guidance documents and crosswalk information needed for the states and EPA to develop and process revisions to State UIC programs, on October 6, 2010.

Federal rule 40 CFR 145.32 requires crosswalks and program revisions from the original approved programs to Oklahoma's UIC programs as currently implemented. EPA requests OCC submit the Class II UIC revision package, in redline-strikeout form, to expedite EPA's review and subsequent discussions. Regulatory and statutory information should be in pdf format. Ultimately, the revision will require EPA Headquarters' approval. A separate effort for Oklahoma's 1422 UIC program revisions requires both ODEQ and OCC participation. EPA understands that ODEQ has prepared its part.

IV. OCC PROCEDURAL AREAS

Like all state and federal agencies, OCC's UIC office has undergone numerous changes through advances in technology and personnel changes. Each provides opportunities to review and modify procedures. All programs benefit from this reassessment, which is part of the basis of the Quality Management / Quality Assurance system that EPA requires of itself and all grantees.

EPA commends OCC for creating a number of tracking spreadsheets prior to full RBDMS implementation. Any design, which minimizes the room for error, while collecting information and semi-automating reporting, is commendable. EPA has several procedural recommendations, (discussed further later in this document):

- Refine the application review system to include quality assurance/data verification information to be included in the scanned exhibit package.
- Create a form, or forms, for reporting each type of periodic UIC requirement, not limited to static levels in monitor wells, production or perhaps days producing from intercept wells, special logging run dates, and fluid levels in simultaneous injection wells.
- Switch the new permit forms to fillable pdf forms, only permitting information in certain blocks and/or choices from specific options. Automatic collection of the information to a database on permit finalization would be preferable.
 - Add lines to enter any necessary permit numbers, such as the order amended, any *Nunc Pro Tunc* (Scribner error correction), Exception Order, or possibly Emergency Orders.
 - Add a place to include the field and producing unit to the EOR application.
 - For wells that are ‘to be drilled’, perhaps the spud date would be useful.

A. New Permit Procedure

The new injection permit process has now been in effect over a year. The new form has the advantage of providing terminology that is more consistent, and it is easier to make corrections. OCC immediately fixed minor problems noted during review.

As with any, new system it takes time and a lot of fine-tuning to reach full efficiency. Educating the operators and the public on the intricacies of the new procedure should be a priority, followed by simplifying in-house procedures. Externally there are two issues: operator confusion as to the application process and logical public access to the permits. Internally, EPA recommends greater consistency with the Pollution Docket system, specifically scanning all applications on receipt.

Operators need to understand the difference between the two procedures and the circumstances that dictate the choice. EPA suggests including clear instructions along with the application forms.

- As EPA understands the current injection application system, the original, pollution docket (PD) order applications apply to all court hearing cases (protested applications, operator requests, emergency permits and/or rule exception requests). Protested permit application receive a PD number and go to the clerk’s office, otherwise only the UIC Department handles them.

Public access to the new permit information online is currently difficult, unless someone literally guides you through the process. While there is a distinct legal difference between an injection permit and an injection order, it is irrelevant to the public. Within OCC, that difference appears on one hand to smooth some problems and on the other to create new ones.

- The OCC Imaging Web Application is the portal for public access. *OAP Orders and Case Files* literally refers to all court orders. EPA understands the only place easily updated to accept the new permits was under *UIC 1012, 1072 and 1075 Forms*, but the name refers only to forms filed for injection operations, not permits.

B. QAPP

Currently, it is difficult to tell if an issue is truly quality related or simply information not scanned into the exhibit package. Quality Assurance Project Plans (QAPP) should minimize ‘grey areas’.

Based on findings discussed in the EOY meeting, EPA makes two requests:

- First, amend the QAPP to incorporate clear-cut data validation methods for any collected information open to interpretive error or license. Examples are available on either EPA's website² or on other state agency websites. Major data categories to include follow:
 - Static level measurements;
 - Production logging, and
 - Field tests not already covered in sufficient detail;
- Second, include the appropriate QAPP validation information in the exhibit package.

C. Stipulations

Typical permit stipulations added to an injection permit include requirements to monitor nearby wells, and to run initial and/or periodic radioactive tracer surveys. These are an important part of ensuring ground water protection. EPA is pleased with OCC's special grant project to list all active order stipulations and have them accessible to the inspectors.

Creating appropriate forms will both enable operators to file the information and OCC to track it. Tracking compliance of special stipulations, such as the annual RAT, various period water level recordings and production requirements, is an integral part of program effectiveness. Specific examples, to cover cases found during the permit review:

- Exception 569013 & injection 571177 orders, substitute running a radioactive tracer survey (RAT) in lieu of a mechanical integrity test. A RAT for this purpose is acceptable if properly run for that specific purpose, i.e. run with time drives and slug chases.
- PD200900304 (572767) accepted a relatively new method of verifying injection does not impact the USDW in an area with problem wells: dynamic fluid level testing via Echometer. Interestingly, Echometer ran the test as a test case when the operator expressed interest. They were unaware that the operator filed it with the State, but said the fluid level was clearly identifiable on the runs. The order requires monitoring either through Echometer readings during injection or daily disposal pressures. How will operators report to OCC and how will OCC verify the data has good quality?

D. New Well Browse & RBDMS

EPA commends OCC on releasing the [RBDMS](#) well module and first batch of e-forms, as discussed in Appendix B.

EPA commends OCC on their plan to update their website with the new online well browser connected to RBDMS. It is good that both the new system and the older *Oil and Gas Well Records Forms* Imaging Web Application are both active and point to the same data, for the interim. However, EPA experienced increased difficulty in locating 1002A records reportedly scanned.

EPA understands the hold-up in funding has adversely affected the RBDMS rollout. The planned replacement GIS well browser looks like an excellent addition. In the mean time, EPA recommends adding a disclaimer to the well search page, reminding the viewer that the list may be incomplete.

² <http://www.epa.gov/region6/water/swp/uic/landban.htm>

V. UIC OVERSIGHT ISSUES

EPA has expressed concerns with some aspects of the OCC permit process over the years. These concerns primarily focus on OCC's area of review process, financial surety requirements, permit stipulation tracking, gaps in permit coverage and follow-through. Stated another way, EPA concerns include differences from the original EPA approved program, differences from the current OCC published program and either insufficient record keeping or quality control.

The final federal FY2010 7520 filing is not due until the end of October, so is not included this year's report.

A. Permit Review

This year EPA reviewed every 11 of the 486 applications for injection or disposal, and all 11 annular injection and all five simultaneous injection applications. After editing the list for applications not covered by our program, there were 47 injection or disposal applications, including seven associated exception orders reviewed, as shown in Table 2.

Table 2: Applications Reviewed

	Total For Review	Issued	In Progress
	63	38	25
Commercial	4	2	2
Non-commercial	18	9	9
EOR	25	19	6
Annular Injection	11	4	7
Simultaneous Injection	5	4	1

[Figure 1](#) shows the change in permit applications over the last five years. The number of applications for this fiscal year was slightly up from last year.

EPA commends OCC for always checking the AOR for permit applications, including simultaneous injection, and for expeditiously sending out deficiency letters. Of the 22 letters in the exhibit packages, only two went out more than 10 days after receipt of the application.

Protested Applications

There have been several protested case hearings in this last year, worth noting.

The Town of Vian, the Cherokee Nation, and others, protested the I-Mac Petroleum Services, Inc application for a commercial disposal well within the city limits. The March 3, 2010 hearing reported, "ALJ finds that the Commission has exclusive jurisdiction over the subject matter, but said jurisdiction is concurrent with the jurisdiction granted to cities and towns to implement rules and regulations enacted to provide for the welfare of its inhabitants. Therefore, the recent ordinance passed by the Town of Vian stands on its own as do the rules and regulations of the Commission. The Commission permitting process cannot take the place of compliance with applicable town

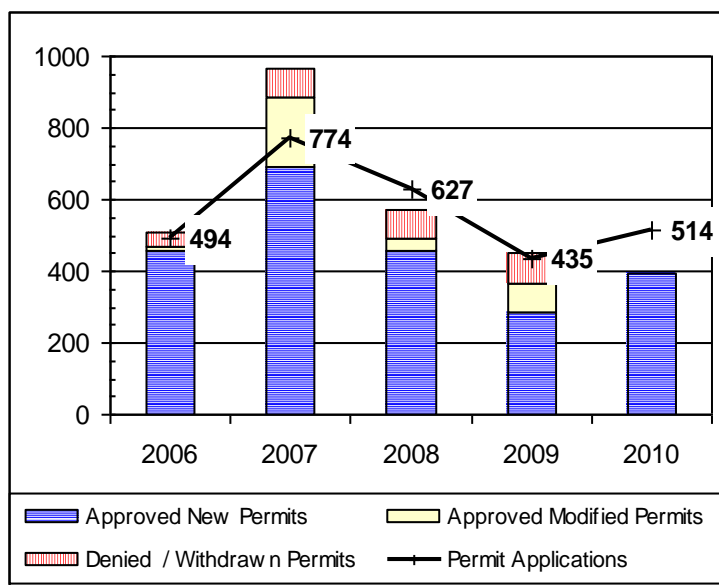


Figure 1: Class II Permitting Actions

ordinances, nor can meeting the requirements of the town take the place of compliance with Commission permit requirements. The permitting of the subject well by the Commission and by the Town of Vian are separate requirements all of which must be satisfactorily complied with prior to the drilling of the Vian SWD #27-1.” The appeal case transcript was not included in the online documentation, but the applicant decided to dismiss their application. Possibly this decision was related to the new Town of Vian ordinance requiring among other things, three million dollar liability insurance and irrevocable credit letter, plus a \$75,000 annual fee.

The Cherokee Nation and at least one citizen protested the B & B Saltwater Disposal, LLC application for a commercial disposal well in Muskogee County. EPA declined to handle the permit application as requested by the Cherokee, as it is not within our jurisdiction. The final order included extra protective measures, including 24-hour pressure monitoring of the casing-tubing annulus, and a larger than required lined containment berm. The only note of concern to EPA is the follow-up well database tracking. EPA contacted OCC in March saying there was a scanned spud notice and a passed MIT, but no completion report. OCC responded there must be a glitch in the system, there is a filed 1002A. However, in September neither of OCC’s online database systems have any record of the well completion report.

OCC reports that, “RBDMS will have a flagging system that will present a list of UIC wells without an accurate completion report (1002a) to our compliance officer. Our compliance officer is currently pursuing all 1002a violations found.”

1. Construction Requirements and Exceptions

EPA recommends procedural changes to verify appropriate Exception Orders exist, based on discrepancies between OAC 165:1, casing and cementing requirements, and file review results.

- 19% of the well applications show open hole completions (11, incl. two Arbuckle)
 - none are commercial
 - 1 permitted with an exception order
 - 7 permitted with no exception order: incl. 2 with <250’ cement above the top perforations
 - Recent rule change allows for openhole Arbuckle wells without rule exception 165:10-5-5(h)(3)
- 25% of the well applications show surface casing set too shallow on converted wells (14)
 - 6 permitted with exception orders
 - 7 permitted without exception orders
- 10% of the well applications show surface casing set too deep (6) on converted wells

2. Fracture Potential

As discussed in previous years, EPA continues to have concerns over the review and handling of wells requesting permits with a maximum injection pressure above 0.5 psi/ft, which may cause fracturing above the injection horizon. While OCC made some changes to resolve this issue, the process needs improvement.

In FY08, OCC added a Standard Operating Procedure (SOP) to their Quality Assurance Project Plan to cover Step Rate Tests (SRT). Running these tests allows verification of what pressure and rate cause fracturing within the reservoir rock. EPA provided a copy of our *Fracture Analysis Guidelines for States*. OCC chose to use a simplified form with few of EPA’s suggested details. The key points in the OCC SRT SOP are as follows:

- “An operator requesting an injection pressure higher than the 1/2 psi per foot of depth to the top of the injection/disposal interval, will need to run a Step Rate Test (SRT) to demonstrate

that the requested injection pressure is below the fracture gradient for the injection zone. The operator will submit a step rate test plan to OCC for approval to insure that adequate measuring and pump equipment are used, and pressure and rate are plotted on the proper axis. The operator will supply OCC personnel a final report with all pertinent data.”

- “The highest injection pressure justified by the SRT will be the last data point set just below the fracture pressure.”
- “Note that if the formation is overpressured, the well will have to be backflowed for a significant length of time in order to establish the linear relationship with at least two pressure/rate data points below the expected fracture gradient of 0.5 psi/ft. If this is not possible or feasible, then the injection permit will be limited to the 0.5 psi/ft. pressure limit.”

a) Permit Reviews

Ten permit applications contained requests for maximum injection pressure exactly equal 0.5 psi/ft from the top injection perforation. Six requests were for greater pressure and one for a lower pressure, but with less than 200’ of strata between the base USDW and top injection. Of the seven that failed to meet OCC criteria, two are not yet final (201000041, 1000520023), three reduced the pressure requested (200900249, 201000024, 1006790003), one received a permit at the requested pressure (1004670028), and the last received a slightly reduced pressure (1006500033).

For the two permits failing OCC specifications, the reviewers apparently did not request or review the planned tests prior to initiation, nor analyze the results. Neither test appears valid. The plots indicate primarily wellbore storage. One started roughly 200 psi over the anticipated fracture pressure, which is invalid for the purpose. OCC accepted both sets of results without comments noted in the exhibit package.

i) Points relating to permit 1004670028, (Whitney 29-8)

- The operator predicted only 162’ between the top perforation and the base treatable water, for the newly drilled well.
- Maximum pressure permitted is 430 psi, (less than 0.5 psi/ft).
- Special stipulations apply, to mitigate one problem well identified within AOR.
- Exhibit package details indicate several points:
 - Telephone communications are not generally noted in the exhibit packages;
 - The operator was not completely familiar with step-rate tests or at least Instantaneous ;
 - The step-rate test results suggest wellbore storage, (see Figure 2).

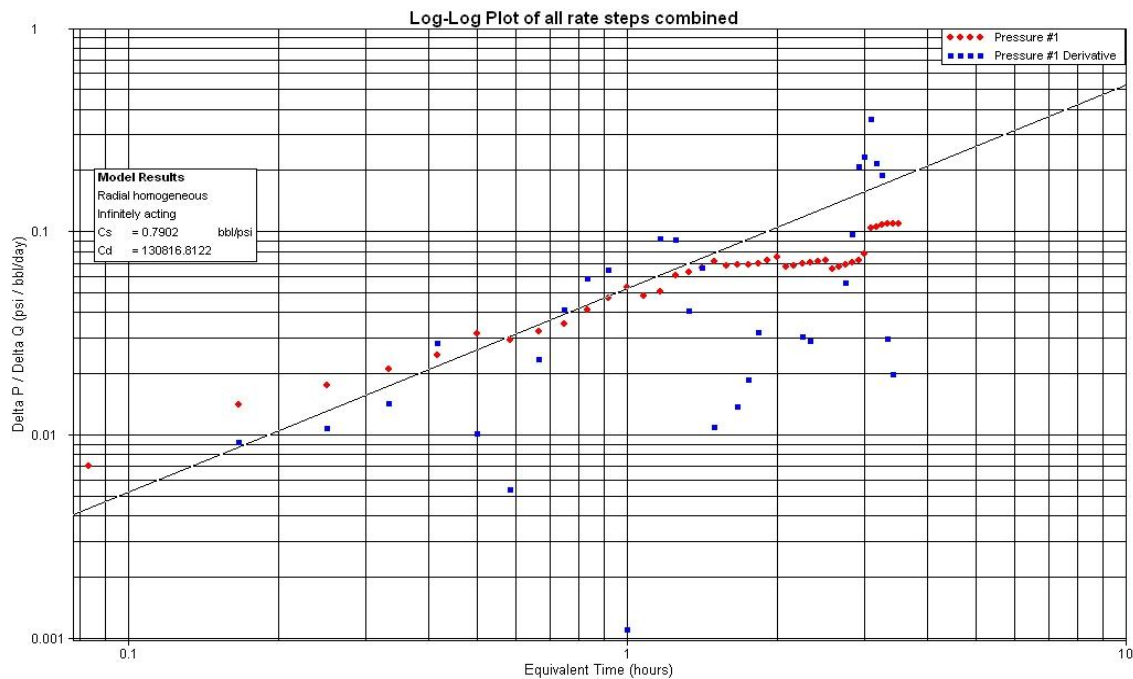


Figure 2: Whitney 29-8, EPA Pan Systems Analysis

ii) Points relating to permit 1006500033 (CPU 149)

- The original application requested 1000 psi maximum pressure, (0.78 psi/ft), with a top perforation of 1276'.
 - OCC approved the permit on 5/17/10.
 - The operator completed the well on 8/6/10, classifying it as an oil well(?), with perforations from 1272'-1296', 1316'-1334', 1342'-1358, 1376'-1396', 1684'-1698', and 1709'-1720.
- The Step-rate test was run 4/16/10 on injection well CPU 73 (1007330057). The top perforation is 1088', and the well has 980 psi maximum permit pressure (0.90 psi/ft).
 - The operator provided essential test details: data summary tables, a linear graph of rate versus pressure and a copy of the circular pressure chart, but little well information.
 - The operator did not provide the location of CPU 73, its proximity to CPU 149, or the producing horizon.
 - The test started at 800 psi (0.74 psi/ft), well above anticipated fracture pressure.
 - The linear rate versus pressure plot appears to substantiate a 900 psi maximum pressure. However, as seen in Figure 3, the log-log plot of the combined data is unanalyzable. In this case, the log-log plot doesn't indicate wellbore storage, but instead shows an abrupt shift downward. It could mean a decrease in skin has occurred (i.e. more negative skin factor) or it could be meaningless due to the limited number of data points.

- The drilling permit allowed an alternate casing program, instead of the required surface casing a minimum of 50' below the 800' base treatable water. Casing string is to be 90' with the production casing cemented to surface.
- The cement program does not follow OCC enhanced recovery unit

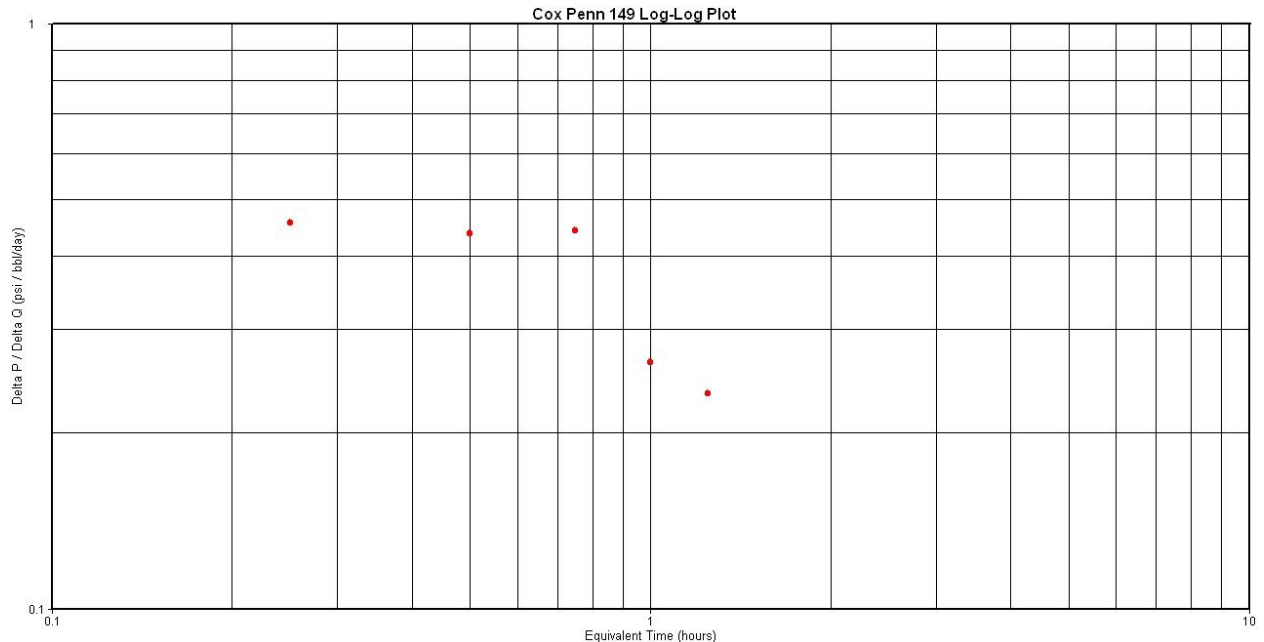


Figure 3: CPU 149 application using test on CPU 73

standards.

b) Historic Practice in the Cox Penn Sand Unit

The Cox Penn Sand Unit is undergoing a revamped EOR effort. As such, OCC received a number of EOR applications for wells within this unit over the last year. The majority of the applications requested maximum pressures well above 0.5 psi/ft. To support the formation fracture estimates, most referred to step-rate tests run earlier in other EOR wells. EPA reviewed 13 permit applications, with respect to the fracture pressure issue. Five separate well tests supported the applications, including the CPU 73 discussed previously.

- Injector CPU 65 (501042, PD200400500), test run 3/28/07
 - This well has a top perforation of 1110' and a maximum order pressure of 1000 psi (0.90 psi/ft).
 - ISIP was listed as 850 psi (0.77 psi/ft)
 - Step-rate pressures ran from 1000 psi (0.9 psi/ft) to 1500 psi (1.35 psi/ft).
 - Linear rate versus pressure is a straight line.
 - This was run in support of application PD200700188 (CPU 73)
 - This well has a top perforation of 1088' and a maximum order (540392) pressure of 1500 psi (1.38 psi/ft).
 - BTW listed as 870'.
 - Stipulation: RAT required with each MIT.

- Injector CPU 71 (355334 in 1991), no date
 - This well has a top perforation of 1064' and a maximum order pressure of 2000 psi (1.88 psi/ft).
 - Step-rate pressures ran from 750 psi (0.70 psi/ft) to 1500 psi (1.32 psi/ft).
 - Linear rate versus pressure is a straight line.
 - This was run in support of application PD200800200 (CPU 55)
 - This well has a top perforation of 1154' and a maximum order (558699) pressure of 1400 psi (1.21 psi/ft).
 - BTW listed as 1040'.
 - One problem well, no AOR calculated in exhibit package.
 - Stipulations: Intercept well; initial RAT and CBL.
- Injector CPU 75 (323672 in 1988), test run 7/16/09
 - This well has a top perforation of 1470' and a maximum order pressure of 1500 psi (1.02 psi/ft).
 - Step-rate pressures ran from 640 psi (0.44 psi/ft) to 1500 psi (1.02 psi/ft).
 - Linear rate versus pressure is a straight line.
 - This was run in support of application 1000550033 (CPU 96)
 - This well has a top perforation of 1123' and a maximum permit pressure of 1000 psi (0.89 psi/ft).
 - BTW listed as 830'.
 - One problem well, AOR calculated with assumed pressure.
 - Stipulations: monitor well with annual fluid level readings.
 - This was run in support of application 1000810045 (CPU 143)
 - This well has a top perforation of 1100' and a maximum permit pressure of 1000 psi (0.91 psi/ft).
 - BTW listed as 790'.
 - One problem well, no AOR calculated with assumed pressure.
 - Stipulations: monitor well with annual fluid level readings.
 - This was run in support of application 1000810046 (CPU 144)
 - This well has a top perforation of 1050' and a maximum permit pressure of 1000 psi (0.95 psi/ft).
 - BTW listed as 620'.
 - One problem well, no AOR calculated with assumed pressure.
 - Stipulations: CBL.
- Application 1006910145 (CPU 103) is still pending.
- Injector CPU 78 (323674 in 1988), test run 4/05/07
 - This well has a top perforation of 1240' and a maximum order pressure of 1500 psi (1.21 psi/ft).
 - Step-rate pressures ran from 500 psi (0.40 psi/ft) to 1400 psi (1.13 psi/ft).
 - Linear rate versus pressure is a 'straight' line.
 - This was run in support of application PD200900006 (CPU 81)
 - This well has a **top perforation of 980'** and a maximum order (565351) pressure of 1400 psi (1.43 psi/ft).
 - **BTW listed as 950'**
 - Stipulation: RAT required with each MIT.
 - This was run in support of application PD200800379 (CPU 13)

- This well has a top perforation of 935' and a maximum order (562114) pressure of 1400 psi (1.50 psi/ft).
- BTW listed as 740'
- Stipulations: RAT required with each MIT.
- Injector CPU 68 (order 326677 in 1988)
 - This well has a top perforation of 1350' and a maximum order (326677) pressure of 1500 psi (1.11 psi/ft).
 - BTW listed as 1070'.
- Injector CPU 69 (order 326671 in 1988)
 - This well has a top perforation of 1101' and a maximum order (323671) pressure of 1500 psi (1.36 psi/ft).
 - BTW listed as 1070'.

EPA requests OCC to identify, at least one, unquestionably valid Step-Rate test in this field, to define the formation fracture pressure gradient in this Cox Penn Unit.

c) SOP revision request

Review of the FY10 application exhibit packages gives no indication that OCC reviewers required any operator to submit a step-rate test plan, or that OCC reviewers conducted their own analysis of the operator's results. EPA requests revision of the Step-Rate Test SOP to ensure results are unambiguous and actions are trackable. The revisions should cover both acceptable test and analysis procedures, not limited to the following items:

- Require at least two rate steps below 0.5 psi/ft, not just for overpressured formations.
- Require a stable static fluid level, prior to the step-rate test.
- Define how the number and length of steps are determined;
- Define the method of setting the maximum test pressure.
- Define the minimum acceptable recording method. Optionally, recommend an optimal sampling interval for the data recorder, including when surface or bottomhole pressure data is appropriate.
- Optionally, during the test request records of all (same zone) offset well injection and production volumes.
- Define how exceedance of wellbore storage will be verified within each rate step;
- Define criteria for identifying fracture initiation.
- Define an alternate acceptable method if physical well and pump conditions do not permit low injection rates.
- Define criteria to limit duplication of effort. Specifically, under what conditions a single test will suffice for a greater (field or unit) area.

OCC Response: There is disagreement on this subject. OCC proposes a technical meeting on determining a satisfactory SOP, including both OCC and EPA engineers, plus at least one industry PE in attendance.

3. Simultaneous Injection Wells

165:5-15 (3) (B) Mechanical integrity will be demonstrated by filing annual reports of surface casing pressure, production casing pressure and fluid level.

EPA commends OCC on quickly adding the simultaneous injection wells to the *UIC 1012, 1072 and 1075 Forms* in the OCC Imaging Web Application, and developing a tracking spreadsheet.

Several examples from the SI well review support the need for well-written quality assurance procedures for the benefit of operators and reviewers alike. How is the injection pressure in a

simultaneous injection well determined? What methods will be allowed to determine rate and pressure?

- Permit 800124, contains a proposed casing string that would not result in simultaneous injection. There is only one pipe string with a downhole pump normally designed for production in the proposal. In addition, there is confusion about the injection pressure.
 - The application/signed permit states 100 psi (from 1200' F.L.) injection pressure. Does that mean 100 psi on top of the hydrostatic head in the tubing?
 - An attachment/exhibit e-mail discusses the requirement of 0 psi injection pressure, owing to a mud plugged well in the area of review. The discussion of increased fluid level and resulting tubing pressure appears to agree to 0 psi injection pressure. This should be stated in the permit.
- Permit 800123, states that calculated rate and pressure will come from a tracer survey. A calculated rate can come from a tracer survey, with skill and attention to detail. However, pressure cannot.
 - An SOP should be added for obtaining rate from a tracer survey to the QAPP, and a copy provided to the operator.

EPA noted a few additional minor bookkeeping issues or observations of sloppy filing by the operator or consultant:

- The wrong type of filing ('well to be converted' instead of 'to be drilled') and variable inclusion of an AOR map. One applied for and received its simultaneous injection permit after the drilling permit had expired.
- One of the reviewers leaves the 'clerk check list' items unchecked.
- Two of the exhibit packages contain completion reports not available through OCC's online system.
- None of the operators of the three already drilled wells filed amended completion reports, not even the one granted the permit in October 2009.

EPA recommends creating a form, to permit operator submission of fluid levels in simultaneous injection wells. Does OCC have a list of existing wells with active simultaneous injection?

4. Annular Injection Wells

A review of the eleven annular injection applications received between 2/25/09 and 2/10/10 indicated a fundamental lack of compliance by operators to the applicable regulations.

- Sixty-seven percent of one operator's submissions covered wells completed over 153 days earlier, and three of them did not have sufficient surface casing to qualify.
- None listed annular injection as the disposal method on their F1000, not even the three that received permits.

Questions from this review include the following. How did OCC verify the correct use of the permit, i.e. disposal of only that well's pit contents, for the Roberts 1-9H completed 371 days prior to the permit receipt? Is the operator required to amend the F1000 to reflect the appropriate disposal method for the pit contents? Are the F1015T applications and permits available for public view?

5. Public Notice

In last year's EOY report, EPA discussed the difference in interpretation of OCC's public notice requirements with respect to Oklahoma County under OAC 165:5-7-27(d). This section is now under 165:5-5(d), but remains unchanged. EPA continues to suggest OCC clarify the regulation during next year's changes.

This will become a more important issue if it becomes part of the approved 147 program.

6. Supplied Data Issues

In previous years, the EPA reported problems with operators not submitting key permit information, i.e. actual reservoir pressure or measured depth-to-static water level, porosity and permeability. This trend continues. OCC cited the lack of this information, in support of their decision not to run a Zone of Endangering Influence calculation, except where problem wells exist.

Surprisingly, operators are more willing to provide porosity and permeability information on the applications (48% & 42% respectively) than the current pressure information (31%).

EPA understands the OCC's practice, when mud plugged or problem wells are located, is to allow a zero pressure permit. To increase the protection to the USDW, EPA continues to strongly recommend requiring documentation of either a valid bottom hole pressure test or static fluid level as part of the application review process.

B. Post Permit Issues

1. Brine Complaint Response

EPA commends OCC on keeping EPA informed of on-going brine complaint investigations and complaints. On several occasions citizen's called EPA when not happy with the results of OCC's investigations. OCC did a commendable job of investigating the complaints. One related discussion held during the year covered OCC's use of the Hounsflow chart. The chart published in *Water quality data analysis and interpretation*, by Hounsflow, Arthur (CRC Lewis Publishers, 1995. OCLC Number 31901359), does not appear to have undergone independent testing and verification.

Robert Zielinski, a USGS geochemist, looked at the information and offered an opinion:

"The origin and chemical evolution of brines can be myriad and complex and a continuum of brine compositions is to be expected. This is indicated, for example, by the large generalized compositional field for oil field brines shown on Hounsflow's fig. 4.34. More specifically, it would be informative to plot the chemical compositions of previously analyzed oil field brines of Oklahoma on fig. 4.34. This would show to what extent Oklahoma oil field brines approach and partially overlap the "evaporite" field. If a particular Oklahoma brine plots well away from the "evaporite" field, then the argument is stronger for chemical evolution of the brine via water/rock interaction. As I understand current ore-deposit research, basinal brines that produced Paleozoic-age hydrothermal (MVT) ore deposits in oil-rich northeastern Oklahoma were transported considerable distances from source areas to the south. Such brines probably experienced considerable compositional modification by water/rock interaction. It is probable that oil field brines of Oklahoma record a similar history. In contrast, brines derived from simple dissolution of evaporite deposits within the Oklahoma stratigraphic section would be expected to plot closer to the evaporite field in fig. 4.34.

Without more specific compositional information for Oklahoma oil-field brines I would caution against sole reliance on fig. 4.34 to assign the origin of ground water or soil contamination to oilfield produced water or some other source. Particularly problematic are brine compositions that plot near the "evaporite" field. Other forensic geochemical indicators for discriminating amongst brines could include Br/Cl ratios, radium isotope ($^{228}\text{Ra}/^{226}\text{Ra}$) ratios, or organic-chemical markers of petroleum. Such analyses could be performed on suspected candidate source brine(s), contaminated ground waters, or aqueous extracts of contaminated soils. In my opinion use of plots such as fig.4.34 can be helpful as a preliminary indication of a broadly defined brine type, (chemically evolved, evaporite-like) but may not definitively prove an oil field source versus a natural source.”

EPA understands the cost issue involved with water samples, but recommends additional verification based on the above comments. Perhaps through analyzing both ground water and injection water samples, so the chart includes both water chemistries.

2. Mechanical Integrity Tests

OCC continues to annually conduct and witness (Appendix B) mechanical integrity tests for far greater than 20% of the inventoried injection wells, as required to meet the maximum five-year testing frequency for each well. OCC is again highly commended for this accomplishment and for witnessing all MITs. [Figure 3](#) shows the number of MIT's witnessed, and the number of site inspections. Site inspections have decreased owing to the combined loss of inspectors and furlough days in FY10.

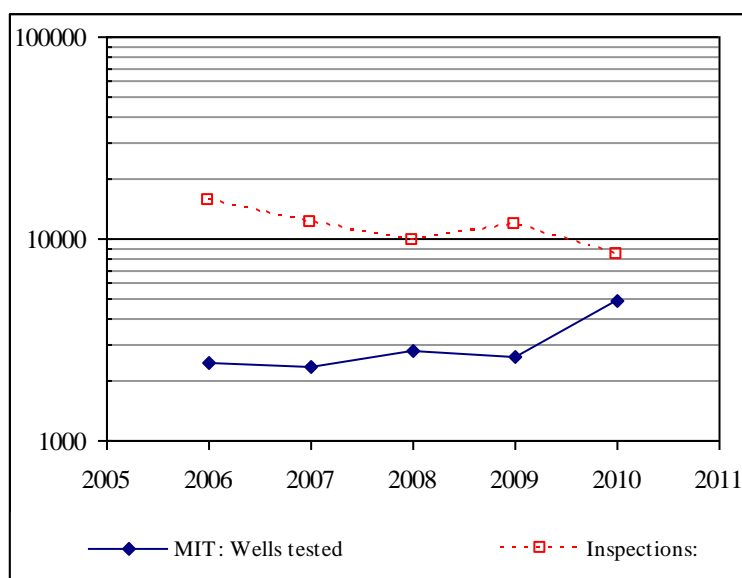


Figure 3. MIT & RAT Results

EPA commends OCC for completing the 2009 scans and adding the up-to-date 2010 MIT's (F1075) into the online system with all the API and Order numbers.

VI. SUMMARY AND RECOMMENDATIONS

Last year EPA discovered several problems and made a number of recommendations. Owing to the delay in finalizing the document, OCC has had no time to act on our comments and recommendations. EPA has mostly excluded those areas from this report.

In this last fiscal year, OCC underwent furlough days and lost 14% of their field inspectors, greatly increasing the difficulty in keeping up with the necessary workload. In response, OCC continues effectively streamlining UIC procedures.

EPA commends OCC's actions in a number of additional areas:

- For their efforts in bringing RBDMS on-line;
- For witnessing all mechanical integrity tests, far exceeding the EPA minimum recommended standard of 25%;

- For their commitment to submit for review the Class II and Class V well program revision packages;
- For their Special Project initiatives,
- For their spreadsheet tracking and enforcement resultant improvement in related Operator compliance;
- For their AOR permit reviews;
- For updating their UIC 1012, 1072 and 1075 Forms to include simultaneous injection;
- For their brine complaint investigations; and
- For updating their on-line data collection.

Based on our review, while OCC has demonstrated a number of improvements, there are still areas that would benefit from additional changes. Our suggestions range from minor changes, which could increase focus on operator compliance to potentially significant improvements in quality assurance. The latter, may result from actual review changes or from better tracking of the reviews. To recapitulate recommendations made within the body of the report:

- Increase compatibility between procedures and viewing of UIC orders and permits;
- Increase the ease and accuracy of locating UIC information on the web;
- Accelerate implementation of RBDMS for UIC use;
- Revise UIC forms and permits to allow greater flexibility in tracking operator compliance, especially for stipulation reporting and exception tracking;
- Change the permits to fill-able e-forms to reduce errors;
- Modify the brine comparison procedure to better support the results of the Hounslow chart, coincidentally building effective documentation for its use;
- Complete all Special Grant Projects within the year granted;
- Ensure all necessary information is included on the UIC permit application, particularly with respect to either the current reservoir pressure or the static water level.
 - For applications where problem wells are identified, require acquisition of a properly documented bottom hole pressure or a static water level.
 - If the top of static water level is within the USDW, require either well treatment or a different reservoir to protect the USDW.
 - For injection pressure requests over 0.5 psi/ft, require complete documentation according to OCC's SOP—particularly not accepting fracture treatment statements that do not meet the requirements, have no location, or are not an acceptable analog.

EPA requests OCC revise the Step-Rate Test SOP in FY11 to ensure fracture gradient results are unambiguous and all actions are trackable.

APPENDIX A
STATE/EPA Staff via conference call
September 15, 2010
FY 2010 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Patricia Downey	Oklahoma Corporation Commission	(405) 522-2802
Mr. Jim Phelps	Oklahoma Corporation Commission	(405) 521-2242
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294

STATE/EPA Staff via conference call
September 21, 2010
FY 2010 Grants Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Michael Vaughan	Environmental Protection Agency	(214) 665-7313

APPENDIX B
Oklahoma Corporation Commission
Underground Injection Control
Class II Wells
Year-end Narrative
Work-plan 2010

Oklahoma Corporation Commission implemented a successful Program in FY 10 meeting or exceeding most of the established targets as determined in Work-plan 2010. The attached "Annual Report Card", depicts a summary of Activities.

Total UIC applications were at 552 for the year, 186 Disposals, 280 Injectors, 6 Annular, 4 SI, 38 Commercial Disposals and 38 Exceptions to the rules. Totals for approved orders were 144 Disposals, 228 Injectors, 1 Simultaneous Injection, 23 Commercial Disposals and 28 exceptions to the rules. Total dismissals numbered 87.

UIC inspections for 2010 were at 8,280, short of the 10,000 target. This was primarily due to a corresponding 14% reduction in the total number of field inspectors from the previous year.

Field Operations is still collecting GPS data for UIC facilities in all four Districts. This is part of Field Operations long-term goal of obtaining a GPS position on all UIC and O&G wells over a five year period.

UIC began the Well Location Project, which utilizes the GPS well location data from the districts. The purpose of project is to examine oil and gas well locations to determine if the approximate well location were true to within a 50 feet from preexisting maps. To date, 24,621 well locations have been examined spanning 49 counties. Of these, 1663 locations have been corrected.

In the area of GIS, UIC has completed the Oklahoma Corporation Commissions aerial photo library. We are current on all aerial photos from the NAIP. At this time, we have county wide aerial photos for the years 1995, 2003, 2004, 2005, 2006 and 2008 in all 77 counties. UIC is currently adding the NAIP 2010 Aerials to the GIS drive. Updated maps with well data current to 11/04/2009 should be in the hands of our field inspectors by the end of January of 2010. All of this data we have made available to the EPA.

In addition to the aerial photos from NAIP, the georeferencing of archival photos is ongoing. All archival photos (primarily from the 1940's) available at the Oklahoma State Library have been scanned and saved to the R Drive. Subsequent georeferencing of these photos produces a continuous historic map of this time frame. This map provides a more precise determination of well locations and a more detailed record past surface pollution. Currently, 11 counties are referenced in their entirety. This project has been continued through December of 2010 using Oklahoma Corporation Commission funds.

UIC currently has received 94.00% of the 2009 1012A forms (Annual Fluid Injection Reports) from operators in Oklahoma. UIC staff continues to place an emphasis on the timely filing of these reports. Compliance for 2008 was 99.70% by January of 2009.

The Document Imaging Project has been successful. All of the well records in District I have been imaged and made available in their office. Approximately 20% of District IV has been imaged. Funds from this fiscal year will continue the project first by completing imaging in District IV then moving on to District III and District II. The files that have been imaged to date will be available on line as PDF files in early December of 2010.

Annual Report Card
UIC Program Activities
Work-plan 2010
(7-1-09 through 6-30-10)

As of September 22, 2010

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	8,280
MITs (total)	2,300	4,896
MITs (Witnessed)	2,070	4,896
Permits (Total Issued)	NA	396
Technical Reviews	NA	424
Operatorship Transfers	NA	379
Technical conferences	NA	352

The Oklahoma Corporation Commission, Oil and Gas Conservation Division has committed to converting to the RBDMS database. We have a projected conversion to the system for the Oil and Gas Division by 02/30/2011.

Since the beginning of this project in FY-2008 many facets have been completed. RBDMS_Entity-Bond was released in the fall of 2009 and has had much success in allowing the Oklahoma Corporation Commission Oil & Gas Conservation Division to help the oil & gas industry with their need in keeping operator records current. The system has automated processes to allow online sign up for operators and allow easy checking for commission staff of bonding information, address changes, officer changes and additional record keeping.

RBDMS_WELL was released in the spring of 2010 and has been a great success in allowing us to finally have one stop shopping for the large state well inventory. With over 513,000 plugged/active wells in the state and over 813,000 records associated with those wells the task of data collection is very important. RBDMS has allowed us to move forward and implement some changes to insure data integrity. Also the use of the 14 digit API# has also been released with this module to allow for event and laterals tracking. This will ensure we have all pertinent data attached to the well from cradle to grave. This module also connects operators and their well inventory on one page for easier data retrieval.

RBDMS_EWFiles release came in June of 2010. The first three forms of this project were 1002A, Completion Report, 1001A Spud Report and 1023 Comingle Report the 1004 Production Report, 1016 Pressure Test 1012 Annual Injection Report and the Mechanical Integrity Test are all in development. These E-forms allow commission staff and industry to use the same data entry screen to data enter these critical report and to insure data integrity. While the commission still accepts paper reports the industry for the first time can now file them electronically and submit them for approval. The next year holds the prospect of several more of these forms being released for the industry to use and upon completion of this portion of the project 23 commission report will go from paper to electronic saving both time and money.

Other parts of the RBDMS project that are under development are the Inspection and Incident Modules, Underground Injection Control Module, Soil Farming Module. We are very excited about the completion of this project and look forward to continued work with our partners (GWPC, DOE, EPA, Oklahoma Secretary of Energy) in its completion.

For the fourth quarter of FY10, the Field Operations Department inventoried 23,499 wells with GPS as compared to 8,402 inventoried wells in the second quarter of FY10. The grand total of wells inventoried since this project in started in FY07 is 139,709. (See attached map). The new corrected positions will be associated with wells in the OCC database in January of 2011.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

APR 30 2013

Mr. Ron Duncan, Acting Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Duncan:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal 2012 (FY12). On June 20, 2012, Ms. Nancy Dorsey met with Oklahoma Corporation Commission (OCC) representatives Mr. Charles Lord, Mr. Tim Baker, Ms. Patricia Downey and Jeff Myers to discuss current UIC program implementation. Mr. Michael Vaughan of EPA's Grants Section participated via phone. By e-mail on October 22, 2012, we invited OCC's comments on the draft evaluation. OCC did not offer any comments on the draft.


First, we would like to commend OCC on several program areas:

- ❖ Submission of OCC's revised draft SDWA 1425 primacy revision package covering changes to the Class II Underground Injection Control (UIC) program, received on September 26, 2011.
- ❖ The number of 5-year mechanical integrity tests (MITs) submitted, performed and witnessed continues to exceed minimum requirements.
- ❖ The requested and scheduled Nuts and Bolts reservoir engineering procedures training, on Fall-Off and Step-Rate tests provided by EPA Region 6 staff.
- ❖ Work with the Oklahoma Geologic Survey on the increased seismicity in areas with active disposal wells.
- ❖ OCC showed continued effective use of special project funding as documented in OCC's Annual UIC Narrative for FY11 and FY12, (see Appendix B).
- ❖ The initial Risk Based Data Management System (RBDMS) mapping capabilities added to the website.
- ❖ The combination of improved information tracking and enforcement initiative has greatly increased operator compliance in reporting.

The primary issues discussed in this report involve OCC's handling of potential induced seismicity, questionable accuracy of operator data, and needed SDWA 1422 program revision. These were discussed with your staff during the June 20th End-of-Year (EOY) conference or follow-up e-mail.

EPA received OCC's draft 1425 program revision on September 26, 2011. I thank you and your staff for your efforts in the implementation of this challenging program. I consider our open dialogue a key component of effective communication between our agencies. If you have any questions on the evaluation report or the revision requests, you may contact me at (214) 665-7101, or your staff may call Stacey Dwyer or Philip Dellinger of my staff at (214) 665-7150.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'WK Honker', written in a cursive style.

William K. Honker, P.E.

Director

Water Quality Protection Division

Enclosure

cc: Charles Lord, OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2012 (FY12)
July 1, 2011 through June 30, 2012**

I. INTRODUCTION

This report is broken into six main sections: Introduction, Grant Work Plan, Program Revisions, OCC Procedural Areas, UIC Oversight Issues, and Summary and Recommendations¹. Additional information is included in the appendices.

By EPA delegation, the Oklahoma Corporation Commission (OCC) is the lead agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. (This does not match the state delegation—see Program Revisions.) EPA maintains authority for Class I, III, IV and V on certain Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2011 and June 30, 2012.

On June 20, 2012, EPA Region 6 representatives spoke with OCC management for EPA's annual end of year (EOY) evaluation. (See Appendix A for attendees). Appendix B contains OCC's annual narrative required in the FY12 UIC grant work plan.

II. GRANT WORK PLAN

A. FY2012 Grant

OCC's FY2012 application was for a total of \$1,124,888 in Federal funds. EPA approved \$287,000 as the Federal 2012 allotment for the State of Oklahoma's UIC program administered by the OCC, and awarded this amount to OCC in FY2012. In addition, EPA awarded OCC \$44,226 in UIC Special Project funds in 2012:

- \$34,226 in general UIC Special Project funds,
- \$10,000 in UIC Special Project travel funds to attend the May 2011 "EPA Geophysical Techniques for Shallow Ground Water", and

Work plan Deliverables—Table 1 identifies State program updates and other deliverables required during FY12. OCC submitted most quarterly and annual reporting items on time.

B. Special Projects

EPA commends OCC on their continuing commitment to improving their information resource base through Special Project initiatives, such as the Well Location Project; georeferenced archival aerial photos; Document Imaging; and attending the Cased Hole and Production Log Analysis Training. The OCC Narrative in Appendix B describes the status of OCC's special projects for the year.

¹ Blue, underlined words are hyperlinked for easier electronic navigation. You can add a 'back button' by going to View: Toolbars: Web.

Table 1. Grant Deliverables

Deliverable	Due Date	Date Received
Form 7520 Quarterly Reports	January 30 April 30 July 30 October 30	2012 on time 2012 on time 2012 on time 2012 on time, interim values+
Grant Work plan/Application: FY13	May 1	On time; revised by request
Annual UIC Narrative Report	August 15	2012 on time, revision requested
Final Financial Status	September 30	2012 on time
UIC Well Inventory	December 9	On time
Detailed Well Inventory	On request	On time (April 17, 2012)
EPA PAM* Reporting	Within 7 days of EPA request	On time
Revised QAPP	Nov. 2	On time Approved Nov. 16, 2011

* Program Activity Measures (PAM)

+ There was a temporary problem with the OCC database tracking 1012a's and violation tracking, pushing many of the reporting violations and enforcement actions into the next fiscal year (2013).

III. PROGRAM REVISIONS

Both EPA and OCC committed to recommencing efforts to update the 1425 and 1422 programs for the 40 CFR Part 147 submissions. EPA provided copies of the appropriate guidance documents and crosswalk information needed for the states and EPA to develop and process revisions to State UIC programs, on October 6, 2010. EPA received OCC's draft 1425 program revision on September 26, 2011.

Federal rule 40 CFR 145.32 requires crosswalks and program revisions from the original approved programs to Oklahoma's UIC programs as currently implemented. Ultimately, the revision will require EPA Headquarters' approval. A separate effort for Oklahoma's 1422 UIC program revisions requires both ODEQ and OCC participation. EPA understands that ODEQ has prepared its part.

IV. OCC PROCEDURE AND PUBLIC ACCESS

Like all state and federal agencies, OCC's UIC office has undergone numerous changes through advances in technology and personnel changes over the years. Each provides opportunities to review and modify procedures. All programs benefit from this reassessment, which is part of the basis of the Quality Management / Quality Assurance system that EPA requires of itself and all grantees.

EPA commends OCC on their continued improvements to their website, including in part:

- expanding the Imaging Web Application, *OAP Orders and Case Files* to include both the UIC Orders and Permits;
- providing the scanned permit packages to the *UIC 1012, 1072 and 1075 Forms*;
- offering e-filing options;
- linking the online well browser to the Risk Based Data Management System (RBDMS) records; and
- adding the first pass GIS mapping option for the wells.

EPA recommends the addition of notices or caveats, where records have either not been scanned or search options are not available. For example, under UIC 1012/1072/1075 Imaging:

- Legal locations, well names and operator codes are not searchable entries.
- A list of the years not yet scanned, i.e. 1072 between 1997 and 2001, 2003 through 2009.

V. UIC OVERSIGHT ISSUES

EPA has expressed concerns with some aspects of the OCC permit process over the years. These concerns primarily focus on OCC's area of review process, financial surety requirements, permit stipulation tracking, and gaps in permit coverage. Through a combination of staff and procedural changes, a refined system is evolving.

Figure 1 shows the variation in UIC permit and order volume over the last five years.

Following up on a previous recommendation, EPA will provide OCC staff training in petroleum engineering fundamentals along with pressure transient analysis techniques to increase their ability to request and utilize operator submissions.

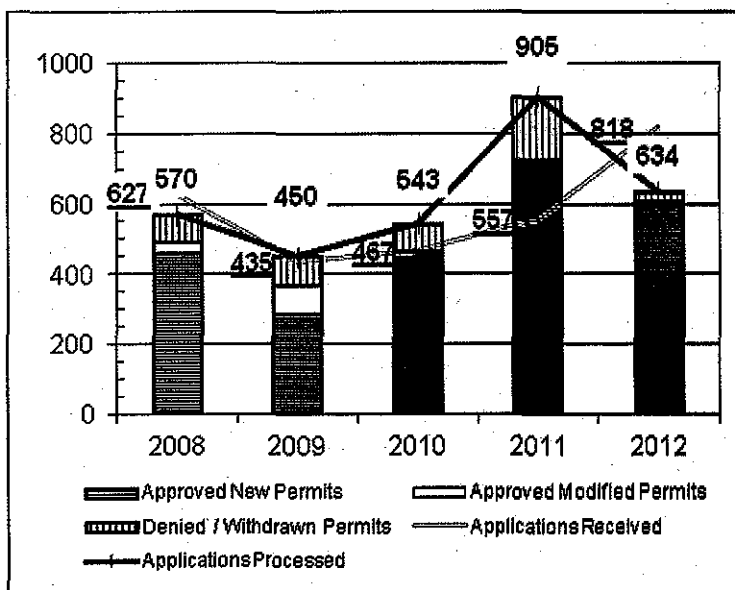


Figure 1: Class II Permit/Order Actions

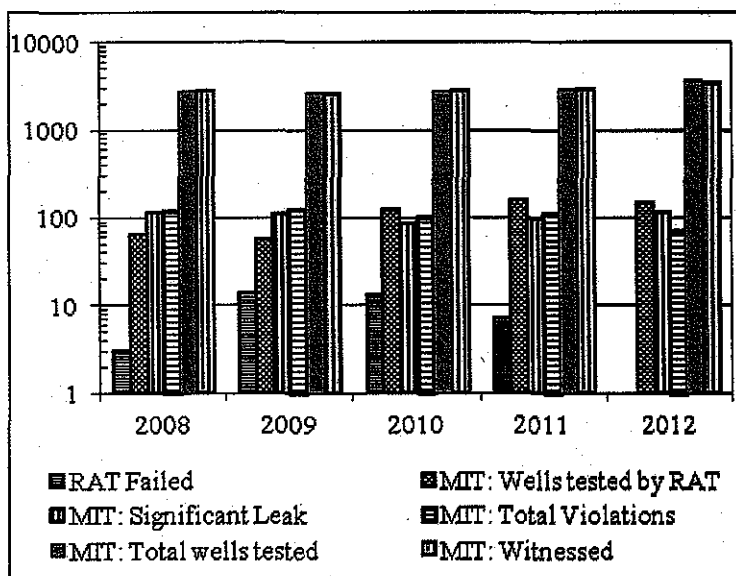
A. Investigations/Complaints

EPA commends OCC for keeping EPA informed of the most important UIC investigations and complaints.

On several occasions, citizens called EPA when they were unsatisfied with the results of OCC's investigations. Most of these situations involved complex multi-media complaints, and generally ended up passed on to either EPA's Emergency Response Team or the Spill Prevention Program.

B. Mechanical Integrity Tests

OCC continues to annually conduct and witness (Appendix B) mechanical integrity tests for far greater than 20% of the inventoried injection wells, as required to meet the maximum five-year testing frequency for each well. OCC is again highly commended for this accomplishment and for witnessing the majority of the MITs. Figure 2 shows the number of MIT's witnessed, and the number of site inspections.



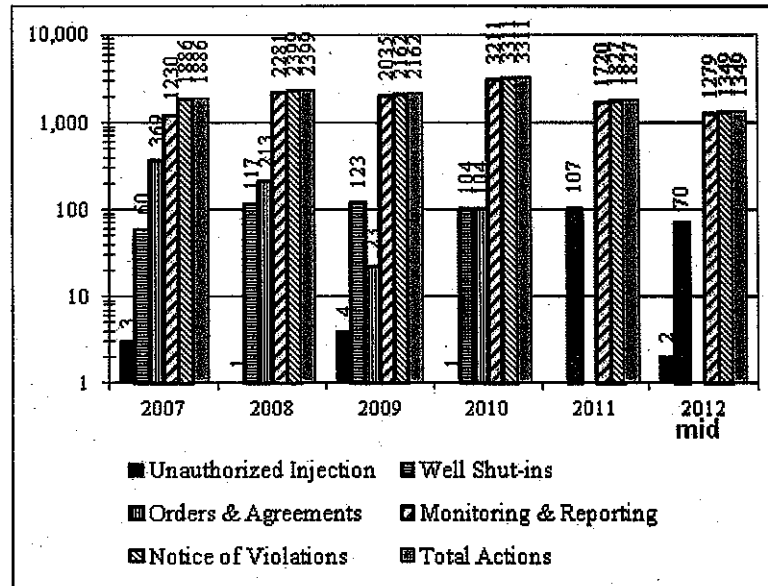
EPA commends OCC for completing the 2010 scans and adding the up-to-date 2011 MIT's (F1075) into the online system with all the API and Order numbers.

C. Enforcement Actions

OCC's actions to improve operator annual reporting (F1012) shows in the jump in Monitoring and Reporting violations seen in 2010, followed by a significant decrease thereafter. This is one of several improvements following institution of improved tracking procedures.

D. Special Investigation

Over the last year, earthquake activity has received a high level of attention coinciding with the DOE requested National Academy of Science study on Induced Seismicity related to Energy.



Both the Oklahoma Geologic Survey (OGS) and the USGS Advanced National Seismic System have recorded a significant increase in earthquakes occurring within Oklahoma. Whether the increase is a result of increased recording capacity, increased crustal stress, increased pressures from human activities, or a combination of factors is unknown.

Figure 3: Enforcement Actions

The Wilzetta area of Lincoln County has been under heavy scrutiny by the USGS, Universities and the press. EPA commends OCC for selecting the OGS as the primary investigative agency for the earthquake events potentially affected by disposal activities. Based on information EPA has collected and reviewed, the most effective investigations are multi-disciplinary. Actions several other State UIC programs found useful include increased monitoring frequency of injection parameters, and collaboration with specialists outside the agency. The additional support is useful for both refining the seismic events into analyzable fault patterns, and providing more detailed reservoir analysis from the injection well data. This analysis may indicate flow characteristics or changes indicative of increased flow capacity or other reservoir changes in the injection interval. EPA is willing to assist with this reservoir analysis, if requested to do so on selected wells of interest.

A quick plot of the Wilzetta SWD 1 Form 1012A injection data, appears to indicate the reported pressure information is not measured at the wellhead. This pressure information could not be used in an analysis. EPA recommends that OCC consider ways to improve the accuracy or verification of operator reported injection information. Further, when a question arises concerning reservoir flow behavior, such as linear or enhanced flow behavior, that OCC request an appropriate reservoir engineering test (fall-off or step-rate), and/or increased monitoring (daily rate and pressure—ideally bottom hole pressure).

VI. SUMMARY AND RECOMMENDATIONS

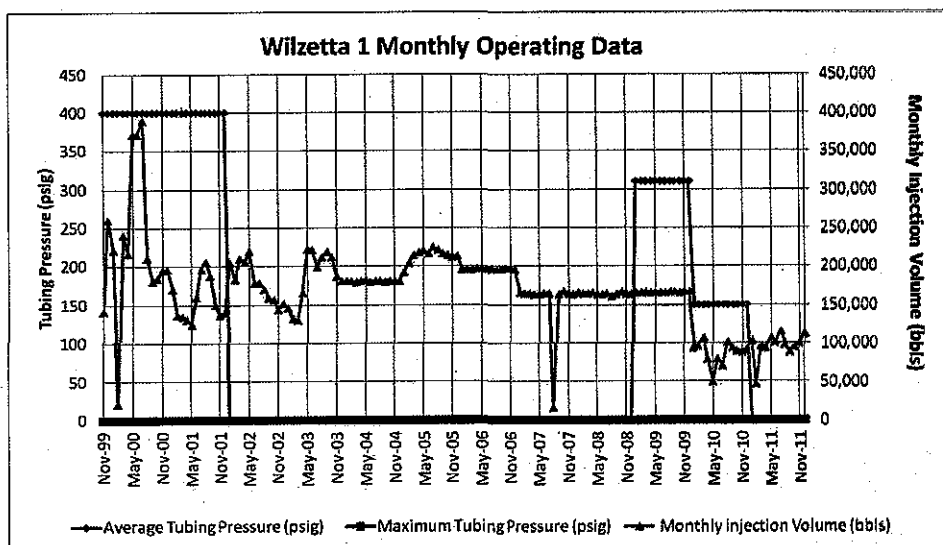
Considering the changes in personnel and increased permit applications, OCC has done well in maintaining review procedures, complaint response and handling the extra issues including allegations of induced seismicity.

EPA commends OCC's actions in a number of additional areas:

- For their efforts in bringing RBDMS GIS search capability on-line;
- For witnessing all mechanical integrity tests, far exceeding the EPA minimum recommended standard of 25%;
- For their commitment to submit for review the Class V well program revision package;
- For submitting for review the Class II well program revision package;
- For requesting the Nuts and Bolts training;
- For their Special Project initiatives;
- For their spreadsheet tracking and enforcement resultant improvement in related operator compliance;
- For updating their UIC 1012, 1072 and 1075 Forms to include simultaneous injection;
- For their brine complaint investigations; and
- For updating their on-line data collection.

Based on our review, while OCC has demonstrated a number of improvements, there are still areas that would benefit from additional changes. Implementation of our suggestions would require changes that may be difficult to accomplish, but would result in improved data quality for OCC and protection of ground water resources. To recapitulate recommendations made within the body of the report:

- Change the level of acceptable Form 1012's from simply filing the information, to supplying accurate information.
- EPA continues to recommend that OCC require all operators to provide initial reservoir pressure information on their UIC application.
- Request more detailed injection monitoring information or tests, where warranted by reasonable allegations or reservoir concerns.
- Add clarification elements to the website, with respect to digital data availability and search options. For example, locating UIC permits versus orders and noting what records are not yet included among searchable data.



APPENDIX A
STATE/EPA Staff in Attendance

June 20, 2012

FY 2012 EOY Discussion

NAME	AGENCY	PHONE
Mr. Charles Lord	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker	Oklahoma Corporation Commission	(405) 522-2763
Ms. Patricia Downey	Oklahoma Corporation Commission	(405) 522-2802
Mr. Jeff Myers	Oklahoma Corporation Commission	(405) 522-2764
Ms. Nancy Dorsey	Environmental Protection Agency	(214) 665-2294
Mr. Michael Vaughan*	Environmental Protection Agency	(214) 665-7313

* via conference call

APPENDIX B
Oklahoma Corporation Commission
Underground Injection Control
Class II Wells
Year-end Narrative
Work-plan 2012
7/1/2011-6/30/2012

Oklahoma Corporation Commission implemented a successful Program in FY 2012 meeting or exceeding most of the established targets as determined in Work-plan 2012. The attached "Annual Report Card", depicts a summary of Activities.

Total UIC applications were at 856 for the year: 402 Disposals, 335 Injectors, 0 Annular, 0 SI, 60 Commercial Disposals and 59 Exceptions to the rules. There were 667 UIC approved orders/permits this year: 304 Disposals, 266 Injectors, 0 Simultaneous Injection, 77 Commercial Disposals and 37 exceptions to the rules. Total dismissals numbered 51.

UIC inspections for 2012 were 11,680, which is higher than the 10,000 target. MIT's numbered 3,694 this year.

In the area of GIS, UIC continues to sustain and add to the Oklahoma Corporation Commission's aerial photo library. We are current on all aerial photos from the NAIP. At this time, we have county wide aerial photos for the years 1995, 2003, 2004, 2005, 2006, 2008, 2009, 2010 in all 77 counties. Updated maps with well data current to 11/04/2012 should be in the hands of our field inspectors by the end of January of 2013. All of the data we have made available to the EPA.

In addition to the aerial photos from NAIP, the scanning and georeferencing of archival photos is ongoing. All archival photos (primarily from the 1940's) available at the Oklahoma State Library have been scanned and saved to the R Drive. Aerial photos available at the Oklahoma Geological Survey are being scanned and saved to the R drive for georeferencing. Subsequent georeferencing of these photos produces aerial photos of historic time frames that can be used. These maps will provide a more precise determination of well locations and a more detailed record of past surface pollution. This project is still in progress using Oklahoma Corporation Commission, UIC Special Project, and Brownfield funds.

UIC currently has received 99.5% of the 2010 1012A forms (Annual Fluid Injection Reports) from operators in Oklahoma. UIC staff continues to place an emphasis on the timely filing of these reports. Compliance for 2009 was 99.80% by January of 2011. Due to the delay in getting the UIC module online for RBDMS, UIC is unable to get accurate compliance data for 2011 1012A forms at this time.

The Document Imaging Project has been successful. All of the well records in District I, III, and IV have been imaged and made available in their office. Approximately 65% of District II has been imaged. Funds from this fiscal year will continue the project by completing imaging in District II.

**Annual Report Card
UIC Program Activities
Work-plan 2012
(7-1-11 through 6-30-12)**

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	11,680
MITs (total)	2,300	3,694
MITs (Witnessed)	2,300	3,398
Permits (Total Issued)	NA	667
Technical Reviews	NA	772
Operatorship Transfers	NA	420
Technical conferences	NA	468

The Oklahoma Corporation Commission, Oil and Gas Conservation Division has committed to converting to the RBDMS database. We have converted to the system for the Oil and Gas Division. The UIC module will be fully operational by 2013.

Since the beginning of this project in FY-2008, many facets have been completed. RBDMS Entity-Bond was released in the fall of 2009 and has had much success in allowing the Oklahoma Corporation Commission Oil & Gas Conservation Division to help the oil & gas industry with their need in keeping operator records current. The system has automated processes to allow online sign up for operators and allow easy checking for commission staff of bonding information, address changes, officer changes and additional record keeping.

RBDMS WELL was released in the spring of 2010 and has been a great success in allowing us to have one stop shopping for the large state well inventory. The inventory includes over 513,000 plugged/active wells in the state and over 813,000 records associated with those wells; therefore, the task of data collection is very important. RBDMS has allowed us to move forward and implement some changes to insure data integrity. Also, the use of the 14 digit API# has also been released with this module to allow for event and laterals tracking. This will ensure we have all pertinent data attached to the well from cradle to grave. This module also connects operators and their well inventory on one page for easier data retrieval.

RBDMS EWFiles release came in June of 2010. The first three forms of this project were 1002A Completion Report, 1001A Spud Report and 1023 Comingle Report. The 1004 Production Report, 1016 Pressure Test, 1012A Annual Injection Report and the Mechanical Integrity Test are all in development. These E-forms allow commission staff and industry to use the same data entry screen to enter these critical reports and to insure data integrity. While the commission still accepts paper reports, the industry for the first time can now file them electronically and submit them for approval. The next year holds the prospect of several more of these forms being released for the industry to use and upon completion of this portion of the project 23 commission reports will go from paper to electronic saving both time and money.

Other parts of the RBDMS project that are under development are the Inspection and Incident Modules, Underground Injection Control Module, Soil Farming Module. We are very excited about the completion of this project and look forward to continued work with our partners (GWPC, DOE, EPA, Oklahoma Secretary of Energy) in its completion.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

SEP 29 2015

Mr. Tim Baker, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Baker:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal 2014. The Environmental Protection Agency (EPA) representatives did not hold an on-site meeting to discuss EPA's annual end-of-year evaluation with the Oklahoma Corporation Commission (OCC) management, as discussions and e-mails were ongoing throughout the year. By e-mail on April 3, 2015, we invited OCC's comments on the draft evaluation and again with the revised version on September 9, 2015.

I thank you and your staff for your efforts in the implementation of this challenging program. I consider our open dialogue a key component of effective communication between our agencies. If you have any questions on the evaluation report or the revision requests, you may contact me at (214) 665-7100, or your staff may call Jim Brown or Philip Dellinger of my staff at (214) 665-7150.

Sincerely yours,

A handwritten signature in blue ink, which appears to read "WK Honker".

William K. Honker, P.E.
Director
Water Quality Protection Division

Enclosure

cc: Patricia Downey
OCC UIC Manager, w/encl.

**EPA Region 6
End-Of-Year (EOY) Review**

**Oklahoma Corporation Commission (OCC)
Underground Injection Control (UIC) Program**

**State Fiscal Year 2014 (SFY2014)
July 1, 2013 through June 30, 2014**

I. INTRODUCTION

EPA has approved the Oklahoma Corporation Commission (OCC) as the primary enforcement agency for the State's Class II injection wells while the Oklahoma Department of Environmental Quality (ODEQ) implements the applicable State UIC program for all other injection wells in Oklahoma. EPA retains primary authority for Class I, III, IV and V on certain Indian Lands and Class II on some Indian Lands not under the authority of OCC. This annual review considers the approved State UIC program administered by OCC, including the UIC grant work plan and other program activities, between July 1, 2013 and June 30, 2014.

EPA representatives did not hold an on-site meeting to discuss EPA's annual end-of-year (EOY) evaluation with OCC management, as discussions and e-mails were ongoing throughout the year. Many of the points related to the OCC's Risk Based Data Management System (RBDMS) were discussed in a separate adobe connect meeting on February 26, 2015 and again in their office on March 9, 2015. (See Appendix A for attendees). Appendix B contains OCC's annual narrative required in the SFY2014 UIC grant work plan.

The single biggest issue facing the OCC in 2014 was the dramatic increase in seismic activity in some areas of the state. EPA closely monitored this increase using Oklahoma Geological Survey (OGS) and United States Geological Survey (USGS) databases, and these areas include active Class II disposal wells. Many experts, including USGS scientists (Rubinstein and Mahani, 2015), the Oklahoma Geologic Survey (Statement on Oklahoma Seismicity dated April 21, 2015) and academic researchers (Walsh and Zoback, 2015), along with other Oklahoma state agencies and elected officials, have concluded a connection likely exists between disposal well location, injection volumes and rates, and seismic activity.

In February 2015, EPA released a report on managing injection-induced seismicity developed by a National Technical Workgroup consisting of State and EPA injection well regulators, including a representative from OCC. EPA also has provided technical support to OCC via a geologist in the Region 6 office in Dallas, related to assessment of the ongoing seismic activity, including defining high priority seismic areas. OCC has implemented some actions that are consistent with recommendations in the National Technical Workgroup report, such as increased reporting frequency of well operational data, attempts to prevent injection pressure transfer to basement rock and requiring some reductions in disposal volumes. However, EPA remains concerned with the continued upward trend in seismicity and recommends that OCC implement additional regulatory actions to assure protection of Underground Sources of Drinking Water (USDWs), including further reduction of injection volumes into the Arbuckle disposal formation in seismically active areas. EPA also recommends further assessment and mapping of the Arbuckle Formation, including its ability to transmit increased pore pressure to basement rock, and the presence or absence of vertically confining strata between the Arbuckle and basement rock.

This report is broken into six main sections: Introduction, Grant Work Plan, Program Revisions, OCC Procedural Areas, UIC Oversight Issues, and Summary and Recommendations. Additional information is included in the appendices.

II. GRANT WORK PLAN

A. SFY2014 GRANT

OCC's SFY2014 application was for a total of \$419,567 in Federal funds. EPA approved \$276,000 as the Federal 2014 allotment for the State of Oklahoma's UIC program administered by the OCC, and awarded this amount to OCC in SFY2014. In addition, EPA awarded OCC \$31,368 in UIC Special Project funds in FY2014. Work plan Deliverables—OCC submitted all required State program updates and other deliverables required during SFY2014.

B. SPECIAL PROJECTS

EPA commends OCC on their continuing commitment to improving their information resource base through Special Project initiatives, such as the geo-referenced archival aerial photos, and Document Imaging. The OCC Narrative in Appendix B describes the status of OCC's special projects for the year.

III. PROGRAM REVISIONS

OCC submitted updates for the Safe Drinking Water Act Section 1425 program to EPA on September 26, 2011. EPA delayed its review of this program update due to seismicity driven priorities in the State. OCC continues to revise their rules as they work to manage the seismicity issue.

IV. OCC PROCEDURE AND PUBLIC ACCESS

Like all state and federal agencies, OCC's UIC office has undergone numerous changes through advances in technology and personnel changes over the years. These changes have provided opportunities to review and modify existing procedures. All programs benefit from these reassessments, which are part of the basis of the Quality Management / Quality Assurance system that EPA requires of itself and all grantees.

A. RBDMS

After considerable time, expense and effort, OCC has transitioned completely to the Risk Based Data Management System (RBDMS) created through the Ground Water Protection Council. EPA commends OCC for persevering through the numerous obstacles and completing the data transfers necessary to use the system. Despite these accomplishments, the system continues to have significant issues with operations and data quality. Due to ongoing problems with the system, as discussed below, OCC terminated the IT contract in place for this project early. The discussion on problems with the system is broken into two categories below.

1. RBDMS Public Access

The public now has the option of using the RBDMS to access UIC data with some locational representation. However, there are still a number of issues with the public access to the mapping system (GIS), including:

- No well numbers are included.
- There is no zoom to select as an option, therefore no way to see the actual well's location.
- Insufficient instructions exist on using the query options.
 - Advanced query should show format examples such as listed below:
 - Does API include the lead state code, is it hyphenated, i.e., 3500302111 or 00302111 or 003-02111 or 35-003-02111?
 - Too much space is allowed for two digit section, township and range numbers.
 - Are lead zeros required for the township and range?
 - Is the Operator search conducted by name of operator or their code number?
 - Full text search shows examples of a location search, using the section, township and range.
 - It is not clear what other text entries may be searched.
 - It is not clear what search options exist. For example are standard search terms allowed, such as 'and', 'or', '+', '-','?

2. RBDMS OCC UIC Staff Access

RBDMS is difficult for OCC UIC staff use due to major data accessibility problems and unreliability. Examples of these problems are described below. For a variety of reasons, this system currently prevents accurate tracking and reporting for Mechanical Integrity Tests (MIT, F1075), Annual Fluid Injection Reports (F1012), and EPA Form 7520. Additionally, essential data cannot be retrieved, including well locations or specific lists of wells and operators in specific formations or areas.

a) Mechanical Integrity Tests (F1075)

Letters to the operators concerning their upcoming or late MITs were sometimes late and/or inaccurate. Attempts of UIC staff to work with IT resulted in reliability changing from 63% to 70%. IT staff identified the problem as “the UIC oracle tables in RBDMS_Test have not been updated since 6/1/2012.”

Currently, RBDMS populates both the order number and related pressure limits to the MIT forms. There is no ability to edit this data, which is sometimes necessary. A number of the scanned completed forms list incorrect or blank orders. This effectively prevents verifying activation of new permits and tracking order/permit compliance.

Additionally, some of these electronically filed MIT reporting forms (F1075s) either do not make it into the imaging system, or end up with multiple copies. In one observed case, more than ten copies of the same form were present. There is no way for UIC staff to delete duplicate copies. IT provided UIC with a way to ‘hide’ them from the viewer.

The viewed image of F1075 titles the comment field incorrectly as “Repair Date”. The correct title, as seen on the actual form is “Repair or Testing Date”. There is a significant difference between the two meanings of these two terms.

b) Annual Fluid Injection Report (F1012)

UIC staff have lost the ability to obtain a list of operators delinquent in filing the F1012.

c) EPA Form 7520

UIC staff can no longer use the database to supply all the required federal information to complete the 7520s, such as monitoring and enforcement violations, since RBDMS will not permit the query or accurately report the results through IT queries.

d) Well locations

UIC staff is unable to obtain location information from the system, except on a well-by-well basis, preventing use of the GIS mapping tool. Instead, OCC staff purchased the necessary information from an external source.

e) Specific lists

Basic quality assurance and quality control checks should be built into the system, so that apparent errors can be prioritized for systematic correction. Examples include:

Filed F1012s (injected volumes), but no F1075 (MIT);

- 1) All forms need to list the active order number(s).
- 2) Some active orders have no associated F1075s or F1012s.
- 3) The system needs to have the ability to verify order and well status (thru Forms F1072, F1073, F1073I or F1002A).

Additionally UIC staff needs to be able to query the system for a number of different options; including a unique list of active UIC wells either by given formation with location; or missing locational data (zero latitude /longitude values).

Although there are substantial problems with the existing database, EPA believes these issues are resolvable. EPA recommends OCC devote necessary resources toward improvement of this critical program component, which would likely entail an outside contract.

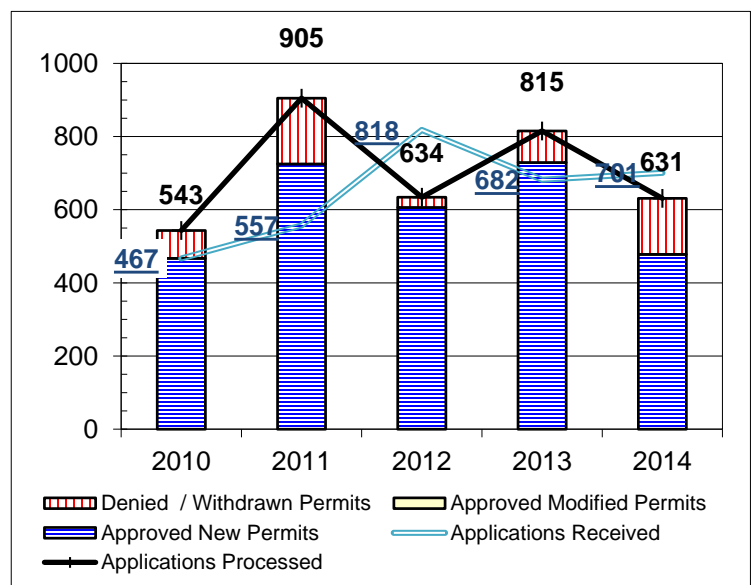
V. EPA UIC OVERSIGHT ISSUES

EPA has expressed concerns with some aspects of the OCC permit process over the years. These concerns primarily focus on OCC's area of review process, financial surety requirements, permit stipulation tracking, and gaps in permit coverage. Although these issues remain of concern to EPA, resolution of RBDMS database issues and addressing areas of high seismic activity were higher priorities for SFY2014.

Figure 1 (to the right) shows the variation in UIC permit and order volume over the last five years.

A. INVESTIGATIONS/COMPLAINTS

EPA commends OCC for keeping EPA informed of the most important UIC investigations and complaints; and for efficient handling of forwarded complaints received by EPA. For example, the Iowa Tribe of Oklahoma's concern about permitted disposal wells near their municipal drinking water system. The Tribe objected



to a proposed disposal well within one mile of their water well. OCC spoke with the operator, who withdrew the permit application.

This case also highlighted an issue with locating tribal system drinking water wells not carried by the ODEQ’s database. Some tribal wells fall between the ODEQ and US EPA SDWIS water well database tracking methods, necessitating the operator requesting a disposal well permit to check with the relevant tribe.

B. MECHANICAL INTEGRITY TESTS

OCC continues to annually conduct and witness (Appendix B) mechanical integrity tests for well over 20% of the inventoried injection wells, as required to meet the maximum five-year testing frequency for each well. EPA again commends OCC for this accomplishment and for witnessing the majority of the MITs. Figure 2 shows the number of MIT’s witnessed, and the number of site inspections. However, the lack of RBDMS functionality compromises the ability of staff and the public to track the MITs from the scanned F1075 forms.

C. ENFORCEMENT ACTIONS

Figure 3 provides a summary of OCC enforcement actions. The absence of Monitoring and Reporting entries for years 2013 and 2014 represents a failure of RBDMS to provide required information.

D. SPECIAL INVESTIGATION

OCC effectively coordinated with the EPA staff implementing the UIC program in Osage County to investigate and remedy a CO2 purge west of the Chaparral Osage CO2 project.

Seismicity

OCC continued to focus significant amounts of UIC staff time to track and evaluate ongoing seismicity in the state. Actions to improve understanding and confront the issue are described below, including both changes to existing permits and rules (approved in early state fiscal year 2015).

1. Rule Change: Arbuckle Monitoring

Monitoring frequency for operational data of all Arbuckle wells increased from monthly to daily, and is submitted to OCC on a weekly basis.

Figure 2: Class II MITs

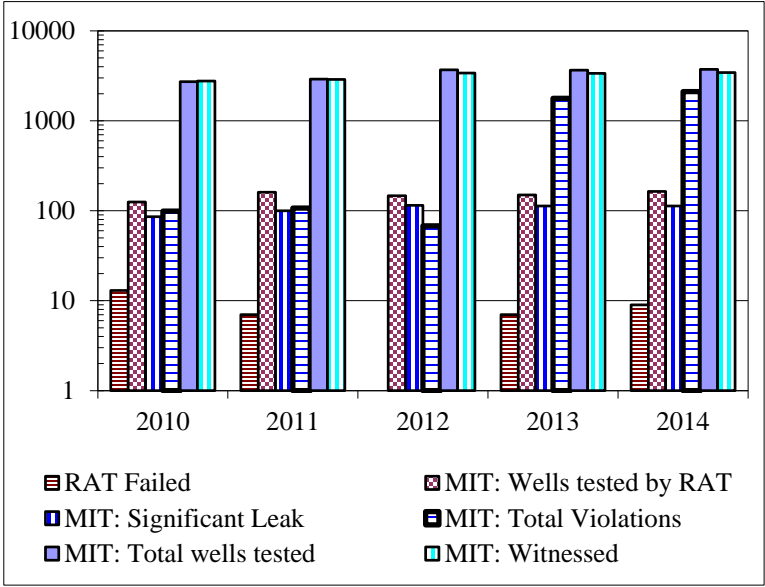
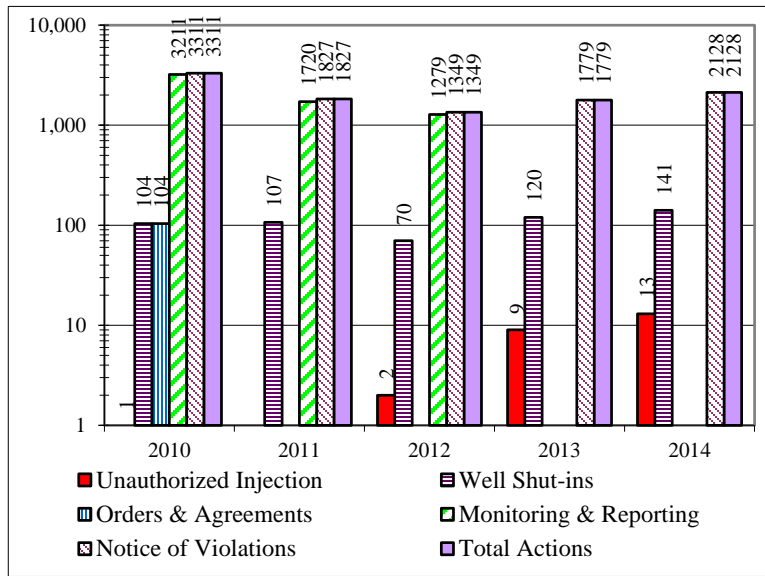


Figure 3: Enforcement Actions



2. Arbuckle Permit Verification: no basement rock open to injection.

OCC implemented an effort to identify all the permitted Arbuckle wells, particularly in areas with seismicity. This effort was to verify if the wells were open only to the Arbuckle, as permitted, or drilled deeper into the basement granite or granite wash. This resulted in several operators (B&W Operating, LLC; RC Taylor Companies; Red Ford/East OK Pipe) plugging wells back above basement.

3. Required Testing and Rate Reduction or Shut-In

OCC required several operators (Love County Disposal LLC; Bosque Disposal Systems LLC) to verify the bottom-hole pressure in their wells, and to reduce injection pressure and rate or cease injection. Both operators ceased injection. Spess Oil Company was required to run a Fall-Off Test, but no rate or pressure reduction was required.

4. Rate Reduction

One of Pedestal Oil's wells had its permitted rate reduced to a third (temporarily).

5. Ongoing Activities

OCC kept maps up-to-date using Oklahoma Geologic Survey (OGS) seismic event and fault locations, in combination with third party UIC well locations (See above notes on RBDMS issues). OCC posted to their website or otherwise provided compilations of UIC operational data to OGS, EPA researchers and the press. The OGS performed seismic analyses for OCC.

VI. SUMMARY AND RECOMMENDATIONS

While changing to RBDMS was a reasonable solution to OCC's database issues, implementation has been less than satisfactory. The key advantages to the system include a single database and public GIS viewing capabilities. The disadvantages center on lack of effective IT support to replace the abilities to query and verify data that was present with the earlier system. This results in multiple decentralized data repositories and use of external data in order to ensure that UIC staff can effectively do their jobs.

EPA recommends OCC invest in additional specialized support staff or a contract to resolve ongoing issues with RBDMS. Specifically, OCC needs to have staff charged with data quality assurance to systematically correct errors in the system; and specialized IT programming support with knowledge of the program and communications skills that will enable both an effective working relationship with the UIC program staff and resolution of the multitude of ongoing problems.

EPA recommends that OCC implement additional regulatory actions to assure protection of Underground Sources of Drinking Water (USDWs), including further reduction of injection volumes into the Arbuckle disposal formation in seismically active areas. EPA also recommends further assessment and mapping of the Arbuckle Formation, including its ability to transmit increased pore pressure to basement rock, and the presence or absence of vertically confining strata between the Arbuckle and basement rock.

VII. REFERENCES

F. R. Walsh, M. D. Zoback, Oklahoma's recent earthquakes and saltwater disposal. *Sci. Adv.* 1, e1500195 (2015). https://scits.stanford.edu/sites/default/files/walsh_zoback_science_2015.pdf

Rubinstein, J.L. and A.B. Mahani (2015), Myths and Facts on Wastewater Injection, Hydraulic Fracturing, Enhanced Oil Recovery, and Induced Seismicity, *Seismological Research Letters*, doi:10.1785/0220150067
https://profile.usgs.gov/myscience/upload_folder/ci2015Jun1012005755600Induced_EQs_Review.pdf

M. Weingarten, S. Ge, J. W. Godt, B. A. Bekins, J. L. Rubinstein, High-rate injection is associated with the increase in U.S. mid-continent seismicity, *Science* 19 June 2015: Vol. 348 no. 6241 pp. 1336-1340 <http://www.sciencemag.org/content/348/6241/1336>

APPENDIX A
STATE/EPA Staff in Attendance
February 26, 2015 via Adobe Connect
repeated **3/9/15 in OCC's office**
Discussion including points on RBDMS

NAME	AGENCY	PHONE
Mr. Charles Lord**	Oklahoma Corporation Commission	(405) 522-2751
Mr. Tim Baker*	Oklahoma Corporation Commission	(405) 522-2763
Mr. Matt Skinner	Oklahoma Corporation Commission	
Mr. Bob Griffith	Oklahoma Corporation Commission	
Ms. Nancy Dorsey**	Environmental Protection Agency	(214) 665-2294

* only via conference call

**both meetings

APPENDIX B
Oklahoma Corporation Commission
Underground Injection Control
Class II Wells
Year-end Narrative
Work-plan 2014
7/1/2013-6/30/2014

Oklahoma Corporation Commission (OCC) implemented a successful Program in FY 2014 meeting or exceeding most of the established targets as determined in Workplan 2014. The attached “Annual Report Card”, depicts a summary of Activities.

Total UIC applications were at 801 for the year: 267 Disposals, 351 Injectors, 0 Annular, 0 SI, 46 Commercial Disposals and 138 Exceptions to the rules. There were 539 UIC approved orders/permits this year: 195 Disposals, 257 Injectors, 0 Simultaneous Injection, 34 Commercial Disposals and 53 exceptions to the rules. Total number of dismissals was 158.

UIC inspections for 2014 were 10,816, which is higher than the 10,000 target. MIT’s numbered 3,920 this year.

In the area of GIS, UIC continues to sustain the OCC’s aerial photo library. We are current on all aerial photos from the NAIP. At this time we have county wide aerial photos for the years 1995, 2003, 2004, 2005, 2006, 2008, 2009, 2010, and 2013 in all 77 counties. These maps with well data are provided to our field inspectors, as the information is updated by our GIS specialist. All of this data is available to the EPA.

In addition to the aerial photos from NAIP, the georeferencing of archival photos is ongoing. This project has been aided by EPA through Special Project grants to purchase the needed ArcGIS license to georeference, and to hire temporary GIS specialist for georeferencing the OCC’s aerial photo library. All archival photos available at the Oklahoma State Library, NCRS, and Oklahoma Geological Society have been scanned and saved to the R Drive. Subsequent georeferencing of these photos produces historic time frames that can be used by UIC and the OCC in investigations. The aerial maps provide a more precise determination of well locations and a detailed record of past surface pollution. A total of 109,684 archival aerial photos have been scanned to date. This project is still in progress using OCC, UIC Special Project, and Brownfield funds.

UIC staff continues to place an emphasis on the timely filing of 1012A forms (Annual Fluid Injection Reports) by operators in Oklahoma. Due to the delay in get the UIC module for RBDMS online and current errors in 1012A report modules, UIC is unable to get accurate compliance data for 2013 1012A forms at this time.

The Document Imaging Project has been successful. The well records in all four Districts have been imaged, and the PDF files made available in each district office. Currently, UIC is working on Phase II of this project. The goal of Phase II is to research the acquired imaged records, and compare them to the central OCC imaging database. Any missing records are then added to the central database. As of 9/3/2014, a total of 40,757 images have been reviewed and 1,610 of those images have been added to the central imaging database.

Annual Report Card
UIC Program Activities
Workplan 2014
(7-1-13 through 6-30-14)

Activity	Goals	Accomplishment
Inspections (On-site)	10,000	10,816
MITs (total)	2,300	3,920
MITs (Witnessed)	2,300	3,214
Permits (Total Issued)	NA	539
Technical Reviews	NA	801
Operatorship Transfers	NA	1,219*
Technical conferences	NA	440

**Number represents total 1073i forms processed per well, both approved and rejected*

The Oklahoma Corporation Commission (OCC), Oil and Gas Conservation Division has converted to the RBDMS database. The RBDMS_Soil Farming Module is under review, and scheduled for release by December 2014. All other RBDMS modules (including UIC) have been released, and are currently in production. OCC staff continues to review the modules for errors, make any needed corrections to RBDMS data, and develop updates to make the new database more user friendly for both OCC and the end users of our data.

Mr. Tim Baker, Acting Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Baker:

Enclosed is our evaluation of Oklahoma's Class II Underground Injection Control (UIC) program performance during state fiscal year 2003 (FY03). On September 4, 2003, Mr. Philip Dellinger and Ms. Nancy Dorsey visited Oklahoma Corporation Commission (OCC) offices and took part in discussions with Mr. Tim Baker and Mr. Rod Davari about current UIC program implementation issues. Mr. Michael Vaughan of our Grants Section joined in by telephone. By e-mails on December 18, 2003, and by telephone on January 7, 2004, we invited Mr. Davari's and Mr. Baker's comments on the draft evaluation. This report considers comments received during the phone call, and by e-mail on January 6, 2004. The FY03 evaluation is subdivided into sections:

1. Introduction
2. Program Revisions
3. UIC Oversight Issues

OCC staff exceeded the field targets and submitted all reports and updates required in the FY03 UIC grant workplan. OCC's Annual UIC Narrative for FY03, (see Appendix A), lists the primary objectives of the UIC program during FY03. The number of 5-year mechanical integrity tests (MITs) performed and witnessed continues to exceed the work plan estimate.

The "Area of Review Summit" proposed by OCC with all Region 6 State UIC programs held April 1 and 2, 2003, compared the methods used in the region for deciding corrective action in the permitting process.

Since EPA's 1997 review of OCC's UIC Primacy program, OCC management and staff have worked diligently to address historic problems with the State's UIC data management. I commend OCC management and staff on their renewed focus on correcting deficiencies in Oklahoma's UIC database. Fundamental surveillance and enforcement actions depend on accurate data management. The remaining issue with the database is enforcement and compliance tracking of District actions. Fundamental UIC issues covered in detail during previous End-of-Year discussions include continued operator noncompliance with filing annual monitoring reports and financial assurance to assure the plugging of abandoned / orphaned UIC wells. Our oversight approach continues to be one of cooperation between our respective staff and management on all UIC implementation issues.

In regards to OCC's draft revisions for both Class II and Class V injection activities, we await OCC's and ODEQ's responses. Our letter of April 8, 2004, requests response to specific questions about OCC's 1998 draft Class II program revision submitted in December 1998. Our letter of March 20, 2003, to both ODEQ and OCC, requests a joint re-submission of the draft revision package for Oklahoma's UIC program authorized under SDWA Section 1422. Until EPA approves such

revision, SDWA authority for all Class V injection in Oklahoma remains with ODEQ. I remain confident that together we will address all significant UIC issues through the program revision process.

The spirit of partnership displayed by you and your staff is commendable. Our common efforts must assure there is adequate protection from underground injection activities for underground sources of drinking water as mandated by SDWA. If you have any questions on UIC program implementation issues, please call me at (214) 665-7101 or Larry Wright at (214) 665-7150. Your staff may call Nancy Dorsey at (214) 665-2294, if they have UIC oversight questions, or Michael Vaughan at (214) 665-7313 about any grant related matters.

Sincerely yours,

Miguel I. Flores
Director
Water Quality Protection Division

Enclosure

cc: Tim Baker, OCC Pollution Abatement Manager, w/enclosure
Rod Davari, OCC UIC Manager, w/enclosure

MID-YEAR EVALUATION
OKLAHOMA UNDERGROUND INJECTION CONTROL PROGRAM
OKLAHOMA CORPORATION COMMISSION
FOR THE
BUDGET PERIOD OF JULY 1, 1989 TO DECEMBER 31, 1989
FY 1989

PROGRAM STRENGTHS

Permit Actions:

The Oklahoma Corporation Commission (OCC) received EPA approval for the BeBee Field aquifer exemption request. OCC will identify additional areas which require exemptions and submit these to EPA for approval also.

File Reviews:

OCC exceeded their commitment to perform 1000 file reviews during the period October 1 - December 31, 1989, and completed 2295 file reviews. OCC will send out letters to operators requiring additional information in order to complete all file reviews. OCC should insure that corrective action is required for wells where there is not adequate cementing to prevent fluid movement into a Underground Source of Drinking Water (USDW).

Enforcement/Compliance:

A new investigation coordinator has been added to the UIC staff to improve their coordination with the field/district offices. This has allowed the UIC Program to be able to get more involved with compliance activities of the field offices and follow up with their own actions as necessary. OCC is taking several other steps to increase operator compliance. More non-compliance is being identified through non-routine inspections than by scheduled MIT inspections. OCC is also sending notices to operators reminding them to submit the required annual reports and sending second notices when required. They are setting up a system to compare completion reports with permits. In addition, OCC shuts-in wells which fail Mechanical Integrity tests. The threat of a contempt citation and possible \$5,000 fine serves as an effective deterrent to non-compliance with a shut-in order.

Data Management:

The UIC program has set up separate files for each well as they gather information (i.e. completion reports, etc.) for the file reviews. This enables the UIC program to have well information readily available rather than to track it down elsewhere in OCC. This information will eventually be micro-filmed.

OCC has complete information entered into their data management system for approximately 10,000 wells which were permitted prior to primacy and should have all information for the total of 16,000 of these "pre-primacy" wells entered by August 1, 1989. OCC continues to update their inventory as additional injection wells are identified, and has updated their FURS inventory in a timely manner. OCC will place priority on entry of information on wells permitted between 1981 and 1986 following entry of the above information.

OCC continues to enhance the programming for their data management system to enable close tracking for compliance/enforcement purposes. In order to obtain unique well numbers for tracking purposes, OCC is working closely with Petroleum Information to obtain American Petroleum Institute (API) numbers for all the wells.

Other:

OCC will be developing regulations or a Memorandum of Agreement with the Oklahoma State Department of Health (OSDH) to insure that they are aware of hazardous waste activities which may affect their permit actions. This is a joint responsibility action in that OCC, in cooperation with OSDH, revoked a permit for a production well to be drilled at Chemical Resources, Inc. (CR) hazardous waste injection well site.

ISSUES RESOLVED

Quarterly Report:

OCC continues to improve the quality and timeliness of their quarterly reports.

Inspector Training/Reporting:

In addition to establishing an investigation coordinator position, OCC has improved coordination with the District and the field offices by conducting meetings to instruct the offices on how to fill out the new inspection and mechanical integrity testing forms. This has also increased reporting of all inspections performed (i.e. when wells have no problems).

REMAINING FOLLOW-UP ACTIONS

Area of Review:

EPA will continue to work closely with OCC to insure the variables used in the calculation of the zone of endangering influence can be adequately documented.

Inspections:

OCC completed 1727 inspections from October 30, 1988 - December 31, 1988, compared with a commitment of 2,000. Weather and other priorities in the oil and gas program led to this shortfall; however, during the second quarter OCC is ahead of schedule and plans to make up the difference.

Mechanical Integrity Testing:

A total of 686 MIT's were completed from October 30, 1980 - December 31, 1988, while the commitment was 1500. Some of this shortfall is the result of an unclear State policy regarding testing of temporarily abandoned wells. OCC should develop a policy regarding testing of wells and monitoring of temporarily abandoned wells.

F41

*Evaluation
during Leno Baker
ad hoc staff period*

April 16, 1990

Mr. Jack Davidson
Director of Oil and Gas
Conservation
Oklahoma Corporation Commission
Jim Thorpe Office Building
Oklahoma City, Oklahoma 73105

Dear Mr. Davidson:

Enclosed is our Midyear Evaluation of your Underground Injection Control program. Tim Baker has reviewed the draft and we have incorporated his comments.

We are very pleased with the accomplishment in this program over the past several years. New initiatives in a number of areas have been implemented which have significantly strengthened the program. I am also pleased that a top priority continues to be full implementation of the data management system for compliance and enforcement activities.

Thank you for your cooperation in this important environmental program. If you have any questions please contact Mac Weaver or Barbara Conklin at (214) 655-7160.

Sincerely yours,

Myron O. Knudson
Director
Water Management Division

Enclosure

cc: Tim Baker w/copy of evaluation

April 16, 1990

Mid-Year Evaluation
Oklahoma Underground Injection Control Program
Oklahoma Corporation Commission
for the
Budget Period of July 1, 1989 to January 1, 1990

PROGRAM STRENGTHS

Completion of First Five Year Cycle

The Oklahoma Corporation Commission (OCC) completed Mechanical Integrity Tests on at least 90% of the "first cycle" of wells by mid-year. All of file reviews for the active and temporarily abandoned wells have been completed for the first cycle. The abandoned wells are currently under review. OCC is meeting their quarterly commitments in these areas.

Field Office Coordination

A new system has been developed by OCC for tracking field inspections. A new inspection form is being utilized and the system interfaces with Underground Injection Control (UIC). This has resulted in more inspection and compliance/enforcement information being passed on to the UIC program, thus enabling them to coordinate and track activities of the field inspectors. OCC has also utilized an enforcement coordinator with much success. This position has shown to be effective in assessing and insuring appropriate enforcement activities at the district/field level.

Proposed Rule

OCC has proposed new rules as a result of the Underground Injection Practices Council peer review of their program last year. The rules require at least 250 feet of cement above the injection zone in the annulus between the production casing and the borehole. Also, the packer must be set at least 50 feet below of top of this cement column. These rules will serve to strengthen the program.

Permits

OCC has met their program commitment for permit determinations. A review of permit files at mid-year indicated increased documentation to support new permit determinations (ie., plugging reports on wells in area of review, and data for zone of endangerment calculation). This program will greatly strengthen the ability to defend permit determinations and the effectiveness of the permitting program.

ISSUES RESOLVED

Aquifer Exemption

The Stratford field has been identified as requiring an exemption. The area is adjacent to the Bebee field which has been exempted. The operator will be filing for this exemption to OCC. This will be submitted to EPA and require approval as a program revision.

Inspections/Enforcement

OCC will be conducting inspector training at the request of field operations. The UIC office will participate in selective inspections where problems have been identified. In two of the District Offices there are two inspectors assigned full time to the UIC program. This increased emphasis on inspections and field office oversight should serve to strengthen the enforcement program.

Citizens Complaints

EPA has referred two citizens complaints to OCC. OCC has performed a preliminary review and will be finalizing reports on actions taken during the second half of the year.

REMAINING FOLLOW-UP ACTIONS

Enforcement/Compliance Tracking

OCC has been unable to enter complete well information into the data management system due to lack of staff. This resulted in part from the late arrival of Federal funding. OCC should place strong efforts into entering the required information in order that operator reporting and compliance can be tracked and appropriate enforcement action initiated.

EPA Follow-up

EPA will be scheduling a meeting to discuss several program areas with OCC, including calculation of the zone of endangering influence, base-of-fresh water maps, and coordination on the Oklahoma Indian programs. In addition, EPA will be updating OCC's program approval/codification resulting from regulation changes which are in the process of EPA review, including rules for temporarily abandoned wells.

MAR 18 1992

Reply To: 6W-SU

Mr. Bob Fair
Acting Director
Oil & Gas Conservation Division
Oklahoma Corporation Commission
Jim Thorpe Building
Oklahoma City, Oklahoma 73105

Dear Mr. Fair:

Enclosed is the final mid-year evaluation of the FY92 Underground Injection Control (UIC) program, as administered by the Oklahoma Corporation Commission (OCC). The evaluation includes UIC achievements, and suggestions for program improvement during FY 92. Mr. Tim Baker reviewed the recently submitted draft evaluation and his comments have been incorporated in the final report.

I am particularly pleased with the direction the Department is taking in the area of increasing its level of enforcement in FY 92 by empowering OCC inspectors to write citations and assess predetermined, automatic penalties in the field when a Rule violation is discovered (Rule Making 58). We appreciate the cooperation and assistance of the UIC staff during the evaluation process, and your continued commitment to the UIC State Program. Please contact Ruby Williams if you need to discuss any aspect of this evaluation, (214) 655-7160.

Sincerely yours,

15/mok

Myron O. Knudson, P.E.
Director
Water Management Division (6W)
U.S. EPA, Region 6

Enclosure

cc: Mike Schmidt, OCC
Tim Baker, OCC

6W-SU:WILLIAMS:rb/gk:3/13/92:DISK:RUBY MYOCCCL3

6W-SU
HUENI
3/1/92

6W-SU
WEAVER
LOVE
3/1/92

3/13/92

3/1/92

FILE CODE

3/1/92

WHT
4-1-92

FY 1992 MID-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM

INTRODUCTION

On December 2, 1981, the Oklahoma Corporation Commission (OCC) was granted primary enforcement authority for the UIC program for class II wells in the state of Oklahoma, including the lands of the five civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates 21,658 class II injection wells under the Oklahoma UIC program.

On January 22, 1992, a mid-year evaluation conference and file reviews were held at the Corporation Commission in Oklahoma City. Representing the OCC's Underground Injection Control (UIC) program were Tim Baker, UIC/Pollution Abatement Manager, and Suchard Uinasurat, Environmental Engineer. The Environmental Protection Agency was represented by Ruby Williams, State UIC Program Manager.

SUMMARY

Accomplishments:

* The Oklahoma Corporation Commission is on schedule for completing the following mid-year targets for the FY 1992 workplan:

- technical review of permit applications
- witnessing mechanical integrity tests (MITs)
- performance of MITs
- compliance reviews (exceeded target by 300%)

* All Significant Noncompliance violations were addressed in a timely manner. No wells were reported on the "Exceptions List".

* Data Management capabilities are continuing to be upgraded. The UIC server was upgraded to allow expansion of the current capacity and increase data management functions.

* The Corporation Commission is in the process of approving a new enforcement system that will allow field inspectors to write citations and assess automatic penalties in the field when a Rule violation is discovered. The UIC department created a proposed fine schedule for certain OCC rule violations: reporting, MITs, unauthorized injection, etc.. Flagrant rule violations will continue to go to hearing seeking the statutory maximum. After the Legislature approves the Rule Making, the new enforcement system will go into effect on July 1, 1992.

Items Targeted for Completion in FY 1992

* The OCC has taken one of its largest enforcement actions in years against citation oil & gas and Mobil Oil Corporation for groundwater contamination of six of the town of Cyril's water supply wells. Under a consent agreement with the OCC, the named oil companies have financed a technical investigation to determine the cause of the pollution and determine how any clean-up responsibility can be shared. The Cyril petition cites that oil and gas waterflood operations in the cement field (first well drilled in 1917) and saltwater disposal in pits adjoining the wells are the pollution sources. The trial was set before a Senior Administrative Law Judge and hundreds of OCC manhours were spent in preparation and actual testimony. The Judge's decision is not expected until late March. The OCC has tested all water injection wells in the Cyril area to ensure mechanical integrity.

* The Oklahoma Corporation Commission has created a Pollution Response Division (formerly the Special Operations Unit for Pollution Prevention - S.O.U.P.P.) under the newly formed Consumer Awareness Division. The goal of the Pollution Response Division will be to serve as technical and enforcement support to any type of environmental violation under the jurisdiction of the OCC, including UIC violations. Due to the fact that the Pollution Response Division was created by statute (requiring a re-definition of job descriptions), the positions within the Division have not been filled as quickly as originally planned. Effective March 1992, Mr. Carl Solomon has been named the Manager of the Pollution Response Division. Mr. Solomon formerly served as the Senior Environmental Supervisor of OCC's Pollution Abatement Department.

* The Oil and Gas Division will conduct re-fresher UIC specific training for OCC field inspectors to insure they are aware of specific UIC regulations and are conducting appropriate follow-up. This UIC specific training is scheduled for May and June, 1992.

* In an effort to incorporate Underground Injection Control and the Comprehensive Groundwater Protection Strategy, OCC's Oil and Gas Division, has proposed the implementation of a new policy, under OCC Rule Making 59, which will not allow the permitting of any new commercial saltwater disposal wells within a Wellhead Protection Area. A final ruling is expected by the end of March, 1992.

Recommended Actions

* The OCC has met their FY 92 first quarter strategic Targeted Activities for Results System (STARS) commitment of 300 MITS and completed an additional 131 MITS in an effort to make-up a FY 91 annual STARS commitment shortfall of 365 MITS. This effort should continue throughout FY 92 with a goal to complete the FY 92 STARS commitment of 2500 MITS and an additional 365 MITS (FY 91 shortfall) by year end.

* consistent with the FY 92 workplan commitments, the OCC/UIC Department anticipates that approximately 150 citizen complaints will be investigated. It is understood that the anticipated 150 citizen complaints referenced in the workplan is a goal (there is no way to have advance knowledge of the number of complaints that may be received). To satisfy this workplan commitment, the UIC staff should demonstrate that citizen complaints are given the highest priority (this is consistent with OCC policy), are investigated promptly, and diligent effort is made to resolve the complaint. In an effort to demonstrate this, the OCC should submit to EPA Region 6 a written report documenting the progress being made with regards to OCC's responsiveness to citizen complaints from the field investigation to resolution (detailing any resulting enforcement/compliance). This report should be submitted at the close of the third and fourth quarters of FY 92. Complaints filed by the public are tracked by the field operations inquiry tracking system. Complaints filed by Department of Pollution Control (DPC) are tracked by the DPC complaint file. Complaints filed by OCC field operations are tracked by a field operations complaint sheet. A summary of citizen complaint activities should be readily retrievable from these tracking sources.

DISCUSSION

Permitting

The Corporation Commission continues to permit wells as a high priority in program implementation. During the first half of FY 1992, 238 permit applications were received. Of these 168 were approved, 14 were denied or withdrawn, and 47 were permit modifications. The mid-year evaluation included a review of several permit files. Typically, these permit files included the required public notices, area of review searches, and "zone of endangering influence" calculations. Well log records, and proof of operator's financial surety were

not located in these files. Well log records and proof of surety are available, but are stored in a separate file storage area in the Commission. Documentation should be placed in the general permitting file stating what logs were reviewed and whether the operator's financial surety was verified. Also, reference should be made as to where these records are located.

Compliance Monitoring and Testing

Inspections

The total UIC program commitment for inspections for the first half of FY 92 was 4000. The Corporation Commission has completed 3128 routine/periodic inspections.

OCC has also committed to witnessing 25% of all mechanical integrity tests (MITS). It has been a standing policy of the Oil and Gas Division that OCC inspectors witness all MITS. Due to a decrease in state matching funds in FY 92 (from 45% to 25%), this policy is subject to change. However, a minimum of 25% of all MITS will still be witnessed by the Commission.

Mechanical Integrity Tests

OCC committed to performing 2500 Mechanical Integrity Tests during FY 92 (STARS). The OCC committed to conducting 300 MITS during the first quarter of FY 92. They completed both parts of the MIT on 336 rule-authorized wells and 95 newly permitted wells during the first quarter of FY 92. An additional 131 MITS were performed in an effort to make-up for a 365 MIT shortfall on their FY 91 MIT (STARS) commitment.

Compliance Reviews

OCC has far exceeded their FY92 mid-year target of 600 compliance reviews. The OCC completed 1561 compliance reviews during the first half of FY 92. The OCC reviews all commercial operations and conducts routine field inspections if the operator is not using the continuous positive annulus pressure monitoring program.

Recordkeeping and Tracking

The current data management system tracks pending applications, mechanical integrity tests, annual and semi-annual reports, and stores individual well construction data in the well inventory file. In late 1991, the existing computer hardware was upgraded to accommodate the expansion of storage and data management

capacity, and increase reliability (less down time). Additionally, an optical hard disc drive and a scanner was added to accommodate the storage of all reports and permits in their existing form.

Enforcement

By mid-year 1992, the OCC cited 1755 well violations. Nearly 85% of all UIC violations are related to well monitoring and operator reporting failures. Approximately 13% of all violations are related to mechanical integrity failures. Maintenance and operating violations account for 9% of the total violations. Enforcement actions taken by the Commission against these violations included: 2165 Notices of Violations (NOVs), 599 Administrative Orders (AOs), and 378 well shut-ins.

Significant Non-compliances (SNCS): The OCC cited six SNCS during the first half of FY 92. Of these violations, three were due to unauthorized injection and three were due to MIT failures. A penalty of \$500 was levied against each MIT violation (refusal to submit to a MIT). A penalty of \$2500 was levied against one of the unauthorized injection violations. All disposal wells that were found to be in violation were shut-in, resulting in the operator's inability to dispose of produced waters and subsequently impacting the operator's ability to produce. All violations were corrected and returned to compliance within 90 days.

Notices of Violations (NOVs): OCC notifies the operator in writing of failure to file the required reporting forms in a timely manner. If the operator fails to respond, the OCC verifies that the well is in operation (a field inspection is made if needed). If the well is operating, OCC sends a second written notice certified by legal staff. If the operator again fails to respond, OCC requests a hearing to pull the permit and plug the well. **Mechanical Integrity Test (MIT) Failure:** All wells which fail a mechanical integrity test are shut-in until they are repaired. The operator is given a specified time to repair the well and to schedule a second test. If the operator is unable to repair the well, it must be plugged.

4/25/94

FY 1994 MID-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM

INTRODUCTION

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for Class II wells in the State of Oklahoma, including the lands of the Five Civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates a total of 19,787 Class II saltwater injection wells (13,725 enhanced recovery injection wells, 5,755 non-commercial disposal wells, and 307 commercial disposal wells).

On March 3, 1994, a mid-year evaluation conference was held at the Oklahoma Corporation Commission (OCC) in Oklahoma City. Representing the OCC's UIC program was Bruce Langhus, UIC Manager. The Environmental Protection Agency (EPA) was represented by Ruby Williams, Oklahoma UIC Oversight Program Manager.

SUMMARY

1994 Mid-Year UIC Accomplishments:

- o The Oklahoma Corporation Commission has met or exceeded the following mid-year UIC commitments negotiated under the FY 1994 workplan:

	<u>Mid-Year</u>	<u>EOY Goal</u>
<u>COMPLIANCE MONITORING & TESTING</u>		
Routine/Periodic inspections:	5997	8000
Compliance File Reviews	12	1200
Complaint response inspections:	68	95
Mechanical integrity tests:	1812	2500
% MITs witnessed:	87%	25%
<u>PERMIT PROGRAM, APPLICATION REVIEW</u>		
Technical reviews:	403	560
Re-permits	61	120
Permit Issuances	342	500
Denied/Withdrawn	0	-

- o A total of 1762 UIC violations were identified under OCC's compliance monitoring program. Nearly 92% were reporting violations, 5% were mechanical integrity violations, and 3% were operating and maintenance violations. There were (3) cases of alleged contamination of underground sources of drinking water (USDWs). A total of 1722 enforcement actions were taken to correct the 1762 UIC violations and bring them back into compliance with OCC UIC rules and regulations.
-

	<u>Mid-Year</u>
<u>ENFORCEMENT</u>	
Total Wells with Violations:	1762
Total Significant noncompliances (SNC):	5
Cases of Alleged Contamination of USDW:	2
Total Enforcement Actions:	1722
Notices of Violations:	1631
Well shut-ins:	87
Contempt Citations/Hearings:	4

- o OCC has updated and re-formatted its UIC Quality Assurance Program Management Plan (QMP) and its Project Plan for chemical analysis (QAPP), in accordance with EPA's 1994 Quality Assurance Guidelines. The QMP has been approved by Region 6 and the QAPP is currently under review.
- o The OCC UIC Program has developed and has distributed (to all 307 Class II commercial disposal operators in Oklahoma) Industry-Outreach oriented informational brochures which focuses on the clarification of what wastes are authorized for disposal via injection into a Class II well. The mail-out of brochures has been followed-up by four educational presentations conducted by OCC at several Oklahoma Independent Petroleum Association meetings. Four scheduled public meetings with the same focus are to be held starting April 29th and ending June 17, 1994.
- o The OCC continues to make great strides in getting the principal responsible parties (PRP) to remediate the Southern Management Inc. (SMI), Class II commercial disposal facility. The SMI Libby #1 well was plugged and abandoned on August 8, 1992, using State funds. In October 1993, the non-hazardous pit waste waters (nearly 14 loads) were trucked to Allwaste Pre-treatment Facility, in Dallas, Texas for disposal. The temporary containment pit system was permanently closed in November 1993, and the PRPs submitted to the OCC's Pollution Abatement Department, for review, a final report regarding the environmental impact of the former disposal facility.
- o The OCC has created and implemented a full-time position of UIC Compliance Coordinator. This effort is in response to OCC's recognition of the need to strengthen its enforcement program, encourage compliance, augment its stance with industry, and convey this to the public.

Items Targeted for Completion in FY 1994

- o The OCC is continuing their enforcement efforts against Southern Management Inc.(SMI), Class II commercial disposal facility, for several UIC violations committed in 1991-1992. The OCC has filed suit against SMI owner, GW Harrell. The OCC is seeking a monetary penalty of \$385,000 for UIC violations and \$83,000 to reimburse the State for monies expended to plug and abandon the Libby #1 well. Currently, settlement discussions are underway between OCC legal counsel and G.W. Harrell's attorneys focusing on the negotiation the settlement amount and a payment schedule.
- o The OCC's Oil & Gas Division has proposed, published for public comment, and submitted to the State Legislature for review, Rulemaking 000086. This Rulemaking proposes increasing the frequency of the mechanical integrity demonstration requirement for Class II commercial disposal wells from once every five years to annually. The Rulemaking also mandates that all Class II commercial disposal facilities keep on file (for a 5-year retention period) a "log" of all loads of wastes trucked to the facility for disposal via injection. These amendments are aimed at increasing the effectiveness of assuring the protection of Oklahoma's underground sources of drinking water (USDWs).
- o During FY94, OCC will be placing special emphasis on submitting post-primacy State UIC program revisions and other supporting documents, as deemed necessary by EPA, for Region 6 review, approval, and publication in the Code of Federal Regulations.

Recommended Actions

- o The OCC should heighten the priority given to conducting and documenting the performance of compliance file reviews. Documentation of the performance of complete compliance reviews is vital to the support of OCC enforcement activities.
- o Inspections of Class II commercial disposal facilities should include the collection of a sample of fluid (from the flow line to the well head or from holding ponds or tanks on the site. Due to budgetary restraints, conducting laboratory analysis on the grab samples collected should be based on risk assessment and target recalcitrant operators. In general, the analysis should be predicated on the location of the well and the type of activity in the producing area (e.g., in agricultural areas, pesticides and herbicides might be useful indicators of misuse of the well)).

APR 28 1996 T.S.

Mr. Michael Battles
Director
Oil & Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Battles:

Enclosed is the mid-year evaluation of the FY95 Underground Injection Control (UIC) program, as administered by the Oklahoma Corporation Commission (OCC). The evaluation includes UIC achievements, and suggestions for program improvement during the remainder of FY 95. Mr. Bruce Langhus reviewed the recently submitted draft evaluation and his comments have been incorporated in this evaluation.

The oilfield pollution prevention handbook and upcoming industry seminars are positive enhancements to your UIC program. Increased communication between the State and industry will certainly benefit both parties. I am concerned about the Class II commercial disposal wells that were permitted prior to area of review (AOR) determinations being required. Since violations were found during recent reviews of some of these wells, I recommend completing AOR determinations on the remaining wells as soon as possible.

We appreciate the cooperation and assistance of the UIC staff during the evaluation process, and your continued commitment to the UIC State Program. Please contact Clint Duty if you need to discuss any aspect of this evaluation, (214) 655-7524.

Sincerely yours,

A
Myron O. Knudson, P.E.
Director
Water Management Division (6W)

Enclosure

cc: Bruce Langhus, OCC
Mike Schmidt, OCC
Tim Baker, OCC

6W-SU:DUTY:CN:4/21/95:OCCMY95: U-WAT-~~2-3-2~~ 24-1
MD 4/25

6W-SU

Graves

Bno 4/25/95

6W-SE

Chavarria

6W-S

Love

JO 4/26/95 *6* *92*

4/10/95

**FY 1995 MID-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM**

INTRODUCTION

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for Class II injection wells in the State of Oklahoma, including the lands of the Five Civilized Indian Tribes, but not including those on other Indian lands. The OCC regulates a total of 21,596 Class II saltwater injection wells (13,693 enhanced recovery injection wells, 5,346 non-commercial disposal wells, 357 commercial disposal wells and 2,200 temporarily abandoned wells).

On February 21, 1995, a mid-year evaluation conference was held at the OCC in Oklahoma City. Representing the OCC's Underground Injection Control (UIC) program was Bruce Langhus, UIC Manager. The Environmental Protection Agency (EPA) was represented by Claudia Hosch and Brian Graves.

SUMMARY

1995 Mid-Year UIC Accomplishments:

- o The Table below summarizes OCC's progress in meeting the commitments negotiated under the FY 1995 workplan:

Compliance, Monitoring and Testing	Mid-Year	EOY Est.
Field Inspections	5710	8000
Compliance File Reviews	1794	1200
Complaint Emergency Response Inspections	58	95
Mechanical Integrity Tests (MITs)	1866	2500
Percent MIT's Witnessed	99%	25%
Joint UIC Staff/Inspectors Field Investigations	18	24
Mail Inventory Form 1012 to Operators	6300	9200
Check 1012s for Positive Annulus Pressure	812	9200
Check 1012s Against Permit Conditions	812	5500
Complaints Investigated	69	300

Application Review/Permit Program	Mid-Year	EOY Est.
Technical Reviews	197	560
Permit Issuances	132	500
Re-permits	37	120
Permits Denied/Withdrawn	0	---
Transfer of Ownership	608	500
Program Management/Public Participation		
Technical Conferences with Applicants	80	60
Hold Public Hearings	13	50
Attend Public Hearings	5	15
Enforcement		
Total Wells with Violations	319	--
Total Significant Non-compliances (SNC)	25	--
Cases of Alleged Contamination of USDW	0	--
Total Enforcement Actions	189	--
Notices of Violations	142	--
Well Shut-ins	0	--
Contempt Citations/Hearings	47	--

The table shows that the OCC is well on the way to meeting or exceeding most of the end of year estimates submitted in their FY 1995 workplan. Of particular note is that the OCC has been able to witness almost all of the MITs performed. The MIT is a good indicator of well integrity which is important in insuring that fluids are injected into the permitted zone. The number of Form 1012s checked against permit conditions and checked for positive annulus pressure appears low because the completed forms are not due back from operators until April 1, 1995.

- o The OCC has updated its UIC Quality Management Plan (QMP) and its Quality Assurance Project Plan (QAPP) for chemical analysis in accordance with EPA's 1994 Quality Assurance Guidelines. The QMP update has been approved by Region 6 and the QAPP is currently under review.

- o The OCC UIC Program has developed an industry outreach-oriented oil field handbook describing innovative pollution prevention technologies applicable to Class II UIC small oil and gas operators. The final brochure will be mailed out to 300 commercial Class II UIC operators. The OCC will present the information at six Pollution Prevention Workshops scheduled to begin in May at various locations throughout the State.

In addition, the OCC UIC group is working closely with their Oil and Gas Division and Oklahoma State University in developing a manual of Best Management Practices (BMPs) for soil erosion at exploration and production sites.

- o In the first part of FY 1995 the OCC coordinated efforts with EPA Region 6 in implementing Environmental Justice analyses of ten commercial Class II salt water disposal wells in Seminole County. These wells are on lands of the Five Civilized Tribes and therefore, under the OCC's jurisdiction. In the past, the OCC has had disagreements with the Bureau of Indian Affairs (BIA) over prosecution of pollution complaints in Indian country. In late March, the OCC will meet with officials from the BIA and the Seminole Tribal Council to determine exact jurisdiction over these Class II wells.
 - o The OCC has continued their enforcement efforts against Southern Management Inc. (SMI). SMI was the operator of a commercial Class II disposal facility which committed several UIC violations in 1991-92. The District law suit against SMI owner, G.W. Harrell, attempting to collect the monetary penalty assessed (\$385,000), is still in discovery. The OCC is currently negotiating a settlement with Mr. Harrell for recovery of costs the state incurred to plug and abandoned the well. There is a real danger that Mr. Harrell will file bankruptcy and the state will recover little, if any, money.
 - o Oversight file reviews conducted in FY 1994 revealed that approximately 150 Class II commercial disposal wells were permitted prior to 1985 ("grandfathered-in") and were not subject to area of review (AOR) determination. The UIC Compliance Enforcement Officer completed AORs on fifty-five of these wells in FY 1994. The remaining ninety-five wells not yet given AORs were targeted for review in FY 1995. The OCC has performed 24 AORs in the first half of FY 1995. Violations were found in some of these reviews, which prompted the OCC to sample and analyze private water wells in the vicinity. The result of sample analyses did not reveal USDW contamination.
-

- o The OCC is currently awaiting bids for seven lap-top computers for the UIC field staff in District I and one PC for the UIC Compliance Enforcement Officer. Lap-top data collection will ensure that the UIC database is updated promptly with MIT's and field complaints to support enforcement activities. Most of the equipment will be purchased by the end of March 1995.
- o In the first part of FY 1995, the OCC and the EPA were to negotiate an enforcement agreement. The EPA is currently undergoing many organizational changes. A new enforcement division will be created as part of the EPA re-organization. All such enforcement agreements have been postponed until the new division is established.

Recommended Actions

- o The OCC should expedite implementation of its own Rulemaking #58, originally proposed and approved during 1993. The rulemaking calls for an enforcement system that allows field inspectors to write citations in the field when a violation is discovered. However, some legal aspects concerning this new system must be resolved prior to implementing Rulemaking #58.
- o The OCC should re-evaluate the adequacy of the current UIC Program financial surety requirements. Current financial assurance requirements have often proven to be inadequate in the long term (with regards to multiple well leases and commercial facilities). Rulemaking #86, which became effective in July 1994, imposes additional surety requirements for commercial operators with facilities that include underground pits. While this may better cover the costs of pit closure, it does not alleviate the State's financial burden of well plug and abandonment and surface remediation.
- o In the first half of FY 1995, Region 6 submitted all OCC post-primacy State UIC Program revisions to EPA Headquarters for approval and publication in the Code of Federal Regulations. Once final approval of the revisions is obtained, the OCC will provide to EPA Region 6 the following documentation:
 - Copy of any State-wide Orders that were codified after the application was submitted
 - Copy of the title page of the State volumes where any revisions have already been codified by the State.

- o The OCC should continue their efforts in AOR determinations of the Class II commercial disposal wells that were permitted prior to 1985. This is especially important since violations were identified in some of these older wells that have already undergone AOR determination.

JUL 23 1997

Mr. Michael Battles, Director
Oil & Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, Oklahoma 73152-2000

Dear Mr. Battles:

On April 30, 1997, a mid-year evaluation conference call was held between the Oklahoma Corporation Commission (OCC) and the Environmental Protection Agency (EPA), Region 6. Representing the OCC was Mr. Tim Baker and Mr. Larry Fiddler. Representing EPA was Mr. David Jones, Ms. Kathy Ketcher, and Mr. Ron Van Wyk. The enclosed report summarizes the EPA's evaluation of the OCC's performance in administering the Underground Injection Control (UIC) Class II program in the State of Oklahoma at the mid-point of Fiscal Year 1997.

We appreciate the effort your staff has put into the evaluation process and their continuous partnership with Region 6. If you have any questions about the enclosed report, please contact Ms. Ketcher at (214) 665-7196 or Mr. Mike Frazier, Oklahoma UIC Program Manager, at (214) 665-7236.

Sincerely yours,

JB

William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: Larry Fiddler, OCC
Tim Baker, OCC
Mike Schmidt, OCC

bcc: Mike Frazier (6WQ-SG)

KSK 7/14/97
6WQ-AT:KKETCHER:tm:x7196:7/14/97:\occmdyr.971

6WQ-SG
FRAZIER
7-15-97

6WQ-SG
DELLINGER

7-15-97

6WQ-S
WRIGHT

7/17/97

6WQ-AT
BUNN

7-22-97

6WQ-A
HOPPERS

7/22/97

**FY 1997 MID-YEAR EVALUATION REPORT
OKLAHOMA CORPORATION COMMISSION
UNDERGROUND INJECTION CONTROL PROGRAM**

The Oklahoma Corporation Commission (OCC) has primary permitting and enforcement authority for Class II injection wells in the State of Oklahoma, including the lands of the Five Civilized Indian Tribes, but excluding Class II wells on other Indian lands.

This report details the significant mid year accomplishments made by the OCC in meeting its Fiscal Year (FY) 1997 workplan commitments. The report also summarizes items that were discussed during the mid-year teleconference held on April 30, 1997, between the OCC, represented by Mr. Tim Baker and Mr. Larry Fiddler and the Environmental Protection Agency (EPA) Region 6, represented by Mr. David Jones, Ms. Kathy Ketcher, and Mr. Ron Van Wyk.

FY 1997 STRATEGIC NUMERICAL WORKPLAN TARGETS

Activity	FY 1997 Target	Mid-Year Accomplishments	% Complete
INSPECTIONS:			
On-site field	10,000	4,973	49.7%
Joint field	24	61	254%
Complaint related	95	106	111%
MITs--total	2,500	1,528	61%
90% witnessed	2,250	1,527	67%
Compliance reviews	2,000	2,650	132%
PERMITS:			
Re-permits	120	36	30%
Technical reviews	560	320	57%
Permits issued	350	244	80%
Permits ownership transferred	1,000	2,243	224%

Deliverables	Due Date	Status
Quality Management Plan Update (QMP)	11/21/97	In process
Quality Assurance Project Plan (QAPP)	11/21/97	In process
Draft FY 98 Application/Workplan	5/01/97	In Review
Quarterly Reports	04/30/97	2nd quarter overdue

GRANT INFORMATION:

OCC's grant allocation for FY 1997 is \$377,000. The UIC grant was awarded January 27, 1997. The OCC has verbally requested additional funds in the amount of \$30,000 for a special project to facilitate the implementation of the UIC data management program known as RBDMS (Risk Based Data Management System). Any award will be utilized to purchase/upgrade computer hardware and software necessary to manage the new database system. EPA Region 6 is currently awaiting OCC's FY 98 completed application and final workplan which will include additional budget and task information regarding the special project. Upon receipt of these documents, Region 6 will initiate the process for awarding the additional funds.

MID-YEAR ISSUES:

Workplan Target Mid-Year Accomplishments/Shortfalls

The Strategic Numerical Workplan Target Chart identifies the OCC's level of accomplishment at mid-year 1997 regarding activities projected by the UIC program. All activity targets have reached or surpassed the 50% level with the exception of repermitting of existing injection wells. EPA recognizes the exceptional efforts of OCC in the categories of joint field inspections, complaint related inspections, compliance reviews, and transfer of permits. Because of the high level of achievement, these specific activity goals should be reviewed during development of the FY 98 workplan.

Quarterly Reporting

The OCC has submitted all EPA Form 7520s to Region 6 on a quarterly basis since the UIC program was delegated in 1981. EPA Form 7520s consist of reports for permit and area of review, inspections/mechanical integrity testing, compliance evaluation, significant non-compliance, and a quarterly exceptions listing. These reports are needed to meet program regulatory requirements, Congressional and Public reporting requirements, and for EPA to adequately assist OCC with their UIC program.

EPA Headquarters initiated a paperwork reduction promotion in FY 95. State UIC programs began submitting their EPA Form 7520s at a reduced frequency beginning with second quarter FY 96. This frequency represented a 50% reduction from FY 95 reporting levels. This reporting reduction was initiated to reduce States' burden in compiling and submitting these reports.

The OCC quarterly reports for second quarter FY 97 are overdue. These reports were due to Region 6 by April 30, 1997. As a reminder, third quarter reports are due to the Region by July 30.

Mobil/Wild Horse Surface Water Contamination

In October 1996, the OCC received a complaint of surface water contamination in Stephens County, which included extensive salt water contamination in a wetland area north of Countyline, Oklahoma, and reports of private water wells contaminated by salt water. In an effort to determine the source of contamination, the OCC immediately ordered several adjacent salt water injection wells shut in and a containment dyke built around the affected land. The OCC also directed the operator, Mobil Oil Company, to deliver to OCC by January 25, 1997, the following information:

1. An audit of the subsurface pressure conditions;
2. Chemistry of injectate and seep water; and
3. Fluid depression tests on the producing wells nearest the seep.

The OCC also ordered mobil to replace 11 private water wells and to continue to monitor water wells in the area.

STATUS: Mobil is in the process of preparing maps of all the surface seeps in the affected area. An audit of the subsurface pressure conditions shows no excessive pressure buildups. More data is required on bottom hole pressures before the survey can be completed and a determination can be made.

FUTURE ISSUES:

1012 Reports and Public Participation

The Link Oil Case raises questions concerning OCC's evaluation of annual monitoring reports and public participation procedures. A meeting between EPA Region 6 and OCC needs to be scheduled to discuss these questions and to review current OCC procedures.

Mechanical Integrity Tests (MITs)

The methods used during MIT in dual completed wells was recently raised as an issue. The EPA and the OCC also need to discuss these concerns.

SUMMARY OF WORKPLAN GOALS FOR MID-YEAR:

The preceding report has effectively identified OCC's level of commitment regarding all goals and activities within the UIC program. All matters pertaining to programmatic activities and accountability have been addressed. At mid-year, all activities exceeded or were within the expected completion range of mid-year goals with the exception of quarterly reports.

EPA looks forward to assisting OCC UIC staff in their efforts to protect the water resources and environment of the State of Oklahoma.

AUG 17 1998

Mr. Larry Fiddler
UIC Manager
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, Oklahoma 73152-2000

Dear Mr. Fiddler:

Enclosed for your review and comment is the draft Fiscal Year (FY) 1998 mid-year program review for the Oklahoma Corporation commission (OCC) Underground Injection Control (UIC) program. This review is based on a teleconference held on April 17, 1998 between yourself, Mr. Tim Baker, Mr. Mike Frazier and Ms. Kathy Ketcher.

Please provide any comments you may have to Kathy Ketcher, State/Tribal Programs Section (6WQ-AT), by August 21, 1998. If you should have any questions, please contact Kathy at 214-665-7196 or Mr. Frazier at 214-665-7236. Thank you for your assistance.

Sincerely yours,

Donna R. Bunn
Chief
State/Tribal Programs Section

Enclosure

bcc: Phil Dellinger, 6WQ-SG, w/enclosure
Mike Frazier, 6WQ-SG, w/enclosure ✓

RECEIVED
SOURCE WATER
PROTECTION BRANCH
AUG 10 AM 9:40
6WQ-S



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

DRAFT

Mr. Michael S. Battles, Director
Oil and Gas Conservation Division
Oklahoma Corporation Commission
P.O. Box 52000-2000
Oklahoma City, OK 73152-2000

Dear Mr. Battles:

On April 17, 1998, a mid-year evaluation meeting was held between the Oil and Gas Conservation Division of the Oklahoma Corporation Commission (OCC) and the Environmental Protection Agency (EPA), Region 6. The OCC was represented by Mr. Tim Baker and Mr. Larry Fiddler; EPA was represented by Mr. Mike Frazier and Ms. Kathy Ketcher. The enclosed report summarizes the EPA's evaluation of the OCC's performance in administering the Class II Underground Injection Control (UIC) program in the State of Oklahoma during the first half of Fiscal Year (FY) 1998, as well as current UIC program issues.

The OCC has demonstrated significant accomplishments in meeting the FY 98 workplan commitments for UIC program activities, and we commend the OCC staff for exceeding many of those commitments. However, Class II re-permitting has fallen below the expected completion range for the mid-year point. Although this area represents a shortfall at mid-year, OCC staff are confident that end-of-year goals in this and all other activities will be met.

As you know, an informal review of OCC's UIC program was initiated in September 1997. On December 16, 1997, Region 6 provided OCC a preliminary assessment describing problematic issues identified in the review. An interagency Agreement, which was developed and approved by both agencies in early 1998, will guide the assessment of OCC's progress toward addressing those issues. In addition, UIC staff from both agencies continue to participate in frequent dialogue via tele-conferences. This communication has provided valuable insight toward reaching the goals of the Agreement. The status of the Agreement commitments is provided in the Program Issues portion of this evaluation.

DRAFT

We appreciate the cooperation of Mr. Fiddler and his staff during the mid-year evaluation process. If you wish to discuss any program issues, please call me at (214) 665-7101 or Mr. Larry Wright at (214) 665-7150. If your staff have specific questions concerning the enclosed report, please contact Ms. Ketcher at (214) 665-7196.

Sincerely yours,

William B. Hathaway
Director
Water Quality Protection Division

Enclosure

cc: Tim Baker, Pollution Abatement Manager
Larry Fiddler, UIC Program Director

DRAFT

**FISCAL YEAR (FY)1998 MID-YEAR REVIEW
OKLAHOMA CORPORATION COMMISSION
OIL AND GAS CONSERVATION DIVISION
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM**

This report details the significant accomplishments of the Oklahoma Corporation Commission (OCC) toward meeting the FY 98 UIC grant workplan commitments between July 1 and December 31, 1997. State UIC program issues discussed during the midyear review are also included, as well as comments pertaining to the status of specific commitments in the 1998 Agreement between OCC and Region 6.

FY98 GRANT MID-YEAR ACCOMPLISHMENTS:

FY 98 Grant Award—The approved Federal FY 98 allotment for the State of Oklahoma's Class II UIC program administered by the OCC is \$395,508. The OCC was awarded \$40,000 in September, 1997, for a special project to integrate its existing electronic databases by implementing a new electronic database. Additionally, \$355,508 was awarded in March, 1998, for regular programmatic UIC activities. This brought the total award for FY 98 to the 100% allotment level of \$395,508.

Workplan Deliverables—The following chart identifies State program updates and other deliverables required during FY 98. All deliverables have been submitted or are in the process of being submitted to Region 6 as mandated by the UIC grant workplan.

Grant Deliverable	Due Date	Date Received
Quarterly Reports (Forms 7520)	as required	submitted to date
FY99 Draft Grant Workplan/Application	June 1, 1998	Not received (in process)
FY99 Final Grant Workplan/Application	August 1, 1998	In process
Annual QMP/QAPP Updates*	June 1, 1998	June 22, 1998
SNC Violation Summary	As required	Will Submit
UIC Violation Summaries (Tasks 600,610)	1/1/98 6/30/98	None Received Will Submit
Annual UIC Program Report (FY98)	July 30, 1998	Anticipated
UIC Regulatory/Statutory Update	July 30, 1998	Anticipated

*The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) are updated annually for tracking any program modifications, concurrences, and/or organizational changes.

Workplan Target Accomplishments and Mid-Year Shortfalls—The following chart identifies the FY 98 Program Activities and OCC's level of commitment regarding tracked field activities within the UIC program. At mid-year, most activities had either exceeded or were within the expected completion range of 50%. The exception was Class II re-permitting.

Program Activity	FY 98 TARGET	Mid-Year Values	Target %
INSPECTIONS (On-site)	10,000	5,318	53%
INSPECTIONS (Joint Field)	48	73	152%
INSPECTIONS (Complaint Related)	95	77	81%
MITs (Total)	2,500	1,243	49.7%
MITs (Witnessed)	2,250	1,243	55.2%
COMPLIANCE REVIEWS	2,000	1,853	92.6%
COMMERCIAL OPERATIONS	226	127	56%
COMPLAINT INVESTIGATIONS	300	176	58%
PERMITS (Total Issued)	540	216	40%
RE-PERMITS	120	28	23%
TECHNICAL REVIEWS	600	338	56%
OWNERSHIP TRANSFERRED	1,600	668	41%
HEARINGS (Public)	75	39	52%
STAFF ATTENDED PUBLIC HEARINGS	15	13	86%
CONFERENCES HELD (TECHNICAL)	60	47	78%

FY 99 WORKPLAN NEGOTIATIONS:

Quality Assurance Annual Update—It is both a regulatory requirement and policy of EPA that all environmental programs conducted on behalf of EPA will establish and implement effective Quality Systems. EPA requires that all organizational units document their systems in a Quality Management Plan (QMP). The QMP must also be submitted and approved prior to approval of grant funding. It is also a regulatory requirement that all projects and tasks involving environmentally related measurements shall have a Quality Assurance Project Plan (QAPP) developed and approved by the Agency prior to any such measurement activities being conducted. The QMP and QAPP must be updated annually. If both the QMP and QAPP are current and valid, EPA requires each state to annually certify that both plans are current by submitting updated signatory pages. Toward this goal, OCC has agreed to incorporate this Quality Assurance (QA) update process into the annual application/workplan submission to EPA beginning in FY 99. This will ensure that the approved QA documents will cover the OCC's project period (the State's FY), rather than the Federal FY. OCC's current QAPP expires April 2, 1999.

Because OCC originally prepared and submitted a 1998 QMP following the outdated QAMS 002/80 guidelines, the Regional Quality Assurance Office agreed to extend the usual QMP deadline requirement. An amended QMP, prepared following the new EPA QA/R-2 guidelines, was re-submitted by OCC on June 22, 1997, and is currently being evaluated for approval by the Region.

FY 99 UIC Grant Allocation—The tentative grant allocation for OCC in FY 99 is \$366,900. This allocation amount reflects a decrease of \$28,608 from the FY 98 funding level of \$395,508. This decrease is due to a FY 98 Class II inventory total of 17,351 wells which decreases the total by 2,322 wells from the FY 97 inventory total of 19,673.

Draft FY 99 Grant Workplan Revisions—After discussions regarding FY 98 workplan accomplishments, target shortfalls and incorporation of items listed in the recently signed Memorandum of Agreement between the Region and OCC, consensus was reached to include the following revisions to the FY 99 workplan:

Delete "Joint Field UIC Inspection" from workplan, add into end-of-year narrative.

The target for mechanical integrity tests (MITs) will remain at 2,500 for FY 99. Upon full implementation of the new electronic database, an accurate determination of Class II well inventory will be used to modify this target if necessary. Based on the current inventory of 17,351 wells and a 5-year testing cycle, this annual target should be near 3,500 two-part MITs. Following an accurate inventory determination, the FY 99 MIT target will be adjusted to reflect a new target.

Re-permitting: Mid-year values show OCC is under target for this requirement. OCC maintains they have no control over how many wells will come up for re-permitting. It was agreed this value would be deleted from the FY 99 workplan and added to the annual end-of-year narrative.

The 2,000 compliance reviews requirement will stay in the FY 99 workplan. However, after an accurate well inventory is obtained, the number of compliance reviews will be adjusted appropriately.

The commitments in the 1998 Agreement between OCC and the Region will be incorporated into the FY 99 workplan where appropriate. Specifically, OCC will add a commitment to the December 1, 1998, deadline for submission of a Program Revision Package which will also address the Area of Review and Class V program issues identified in the 1998 Agreement.

PROGRAM ISSUES:

Reviews of State UIC Programs—As stated at 46 Fed. Reg. 27333, 27337 (May 19, 1981), Class II UIC State programs authorized under section 1425 of the Safe Drinking Water Act (SDWA) are required to demonstrate that the program in fact “represents an effective program to prevent underground injection which endangers drinking water sources.” Region 6 is currently conducting program reviews to determine the “effectiveness” of State Class II programs, pursuant to SDWA section 1425, and the “equivalency” of State UIC programs for Class I, III and V injection wells under SDWA section 1422. A thorough evaluation of Oklahoma’s Class II UIC program was completed in December 1997, resulting in an interagency Agreement which provides an opportunity to address the program deficiencies identified during that program review.

Status of 1998 Agreement Commitments:

Draft Action Plan—A draft action plan (Attachment A) was submitted on March 20th, and finalized on April 2, 1998 (Agreement, item A.2). This plan has served as a template during frequent interagency discussions at the program level. The discussions focused on the problematic issues identified in the 1997 informal program review and offered the staff of both agencies additional understanding of those issues. However, several major issues remain unresolved, e.g., area of review/corrective action. Pursuant to the Agreement, OCC staff anticipates submitting proposed revisions to the approved State UIC program prior to December 1, 1998.

New Data Management System—The OCC’s new data management system (DMS) was installed prior to the April 1 target. Since April 1, the Region evaluated the status of DMS on two separate occasions, April 15 and June 24, 1998. The following comments serve as the Region’s evaluation of OCC’s DMS (Agreement, item B.7):

As of the June 24th program visit, the merge of the Compliance/Enforcement database with the Inventory database was 80-90% complete. The merge of the MIT database was approximately 50% complete. 100% merge of all databases is expected before October 1, 1998. An increase in compliance assurance activities is anticipated following the completed merges. A general lack of compliance tracking was a deficiency identified

in the 1997 informal program review.

A major deficiency identified in the 1997 program review was operator compliance with submission of annual monitoring reports. Currently, OCC regulates approximately 3,800 Class II well operators. During the June 24th visit, the State program reported approximately 7,000 annual monitoring reports (OCC form 1012) had been received, with about 2,600 of those forms being entered into OCC's DMS. The number of wells represented by the 7,000 monitoring reports was not known. Approximately 700 forms had been returned to the operator for correction, and about 500 of those returned had been re-submitted with the appropriate corrections. After processing all of the 1012s received, an accurate number of non-compliant operators and wells can be identified. This is anticipated by September 1, 1998. Following that determination, the OCC staff intends to seek compliance with a notice of violation letter, followed with a compliance order if necessary.

FY 99 Enforcement Agreement—The Region's Compliance Assurance and Enforcement Division (6EN) is Regional lead in the development of the FY99 UIC Enforcement Agreement between OCC and Region 6. Currently, OCC UIC staff and 6EN Water Enforcement staff are negotiating the FY99 enforcement agreement required by the 1998 Agreement.

Other August 1, 1998, Commitments—Numerous tele-conferences between OCC and Region UIC staff have provided valuable dialogue on many programmatic issues including the permit application process, operating requirements, closure, and permit compliance (Agreement, items B.1, B.2, and B.3). The dialogue has enabled both staffs to better understand the issues. However, many issues have not yet been resolved at this staff level. The unresolved issues will most likely be addressed through the program revision process expected to begin with OCC's program revision submission (Agreement, item C.1). Other commitments include submission of quarterly report addendums indicating permit termination proceedings due July 30th (Agreement, item B.3), staffing evaluation and future plans due August 1st (Agreement, item B.6), and the results of UIC orders comparison with approved program due August 31st (Agreement, item B.4).

Area of Review—At Primacy, the Area of Review (AOR) for a Class II injection well was defined as a circle with a radius of ½-mile. In 1992, the OCC reduced the AOR radius to ¼-mile. On May 19, 1998, the Region transmitted by fax a May 15th memo in which Regional Counsel determined that the 1992 modification of the AOR radius was not part of the approved State UIC program. This change has been and continues to be a topic of considerable debate at the staff level, as OCC continues to use the ¼-mile AOR in its current permit review/issuance process. In determining an "effective" permitting process, the most important performance standard is the protection of drinking water resources from underground injection. The OCC should carefully consider this "effectiveness" standard and the inclusion of OCC's 1992 permit application modifications in a revised program description.

Class V Authority—Item B.8 of the 1998 Agreement commits Region 6 and OCC to develop a draft plan to alleviate any conflicts between Federal UIC authority and State authority for brine injection granted to OCC by the Oklahoma Brine Development Act of 1991 and the Oklahoma Environmental Quality Act of 1993. The Region is currently reviewing this issue and anticipates

transmitting additional information to the State before October 1, 1998. This issue has been discussed thoroughly at the UIC program staff level with OCC and the Oklahoma Department of Environmental Quality (ODEQ), and a final plan to address this issue is expected before December 1, 1998 (Agreement, item C.3).

Program Revision Submission—Pursuant to item C.1 of the 1998 Agreement, all program revisions not previously approved by the Agency will be submitted by the OCC as part of a program revision package before December 1, 1998. This revision package should include a revised program description, any unapproved changes in OCC regulations, and if necessary, a revised Memorandum of Agreement and Attorney General's Statement. If the Agency determines the revised program package unacceptable, a formal "effectiveness" review may be necessary.

EPA REGION 6 MID-YEAR REVIEW
OKLAHOMA CORPORATION COMMISSION (OCC)
UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

State Fiscal Year 2000(FY00)
July 1, 1999 - June 30, 2000

This report details the evaluation of activities and accomplishments of the Oklahoma Corporation Commission (OCC) toward meeting the FY2000 UIC grant workplan commitments between July 1, 1999 and December 31, 1999. State UIC program issues discussed during the mid-year review are also included. This review is presented in three sections in an effort to increase oversight feedback to the State:

- FY2000 UIC grant workplan commitments and accomplishments
- FY2001 UIC grant workplan issues
- Specific UIC program issues

FY2000 GRANT WORKPLAN:

FY2000 Grant Award - The approved Federal FY2000 allotment for the State of Oklahoma's Class II UIC program administered by the OCC is \$348,300. EPA awarded that amount in November 1999. The OCC was also awarded an additional \$508 from the FY99 OCC UIC grant in March of 2000. This brings the total FY2000 award to \$348,808.

FY2000 Grant Mid-Year Accomplishments and Deliverables - On April 24-26, a mid-year evaluation meeting/review was held between OCC and EPA Region 6 staff to evaluate the OCC's performance in administering the grant workplan for the Class II UIC program during the first half of FY2000. The meeting was held at the OCC offices in Oklahoma City. Representing OCC were Larry Fiddler and Tim Baker, and representing EPA Region 6 were Mike Frazier and Mike Vaughan.

State program updates and other deliverables required during FY2000 are identified in Table 1. All deliverables have been submitted to Region 6 as required by the UIC grant workplan, except for the significant non-compliance (SNC) and UIC violation summaries, which were due in FY2000, but which haven't been received by EPA. The Region expects to track OCC's enforcement activities through the SNC and UIC violation summaries, especially enforcement related to operator non-compliance with annual monitoring reporting requirements (OCC Form 1012).

Table 1. FY2000 Grant Deliverables.

Grant Deliverable	Due Date	Date Received
Quarterly Reports (Forms 7520)	July 30, 1999, October 30, 1999, January 31, 2000, and April 30, 2000	July 23, 1999, November 23, 1999, March 29, 2000, and June 6, 2000
FY01 Draft Grant Workplan/Application	May 1, 2000	May 3, 2000
FY01 Final Grant Workplan/Application	June 2, 2000	Workplan has been approved by EPA. The Application should be complete by the week of August 7, 2000.
Annual QMP/QAPP Updates*	* QMP - January 12, 2000 QAPP - May 20, 2000	Updated signature pages received at EPA for both QMP and QAPP; The QAPP has not been approved, however - it is being reviewed by EPA.
SNC Violation Summary (Task 620)	Quarterly, as required	None received in FY00
UIC Violation Summaries (Tasks 600,610)	January 12, 2000, June 30 2000	None received in FY00.
Annual UIC Program Report (FY00)	July 30, 2000	OCC will submit this by August 18, 2000
Final Financial Status Report (FY00)	September 30, 2000	
Annual UIC Enforcement Agreement	May 1st of each year with Draft workplan submission	6EN has determined that a formal agreement is not necessary at this time
UIC Annual Inventory	Annually as requested by EPA	Typically requested at the end of each calendar year
UIC Regulatory/Statutory Update	July 30, 2000	OCC will submit this by August 18, 2000

** Even though the QAPP and QMP are due at different times, EPA recommends that OCC submit both updates with the draft application workplan because the QMP must be reviewed and approved before the grant can be awarded.*

Workplan Target Accomplishments and Mid-Year Shortfalls—The workplan targets for specific OCC UIC Program activities for FY2000 and the mid-year level of accomplishment for those tracked activities are presented in Table 2.

Table 2. Program activities, FY2000 targets, mid-year values and percent accomplished.

Program Activity	FY2000 TARGET	Mid-Year Values	Target %

INSPECTIONS (On-site)	10,000	9406	94
INSPECTIONS (Complaint Related)	95	18	19
MITs (Total)	3,200	921	29
MITs (Witnessed)	2,880	921	32
COMPLIANCE REVIEWS	3,200	3069	96
COMMERCIAL OPERATIONS	219	165	75
COMPLAINT INVESTIGATIONS	300	165	55
PERMITS (Total Issued)	300	86	29
TECHNICAL REVIEWS	500	177	35
OWNERSHIPS TRANSFERRED *	1,200	522 applications	44
PUBLIC HEARINGS	75	34	45
Staff-attended public hearings	15	9	60
TECHNICAL CONFERENCES	60	36	60

** 75 applications to transfer ownership were rejected*

OCC's progress toward meeting the FY00 UIC grant workplan targets are acceptable with the exception of the number of mechanical integrity tests conducted. The target for FY00 is 3,200 MITs based on the number of Class II wells reported in December 1998. The actual number of MITs performed in the first-half of FY00 was only 29 percent of the target. This was discussed during the mid-year evaluation visit; OCC staff believe that the target shortfall may be related to the inaccurate well inventory from December 1998. The other shortfalls are in categories outside the control of the State program, i.e., being dependent on the number of applications, public hearings, and/or citizen complaints. OCC's UIC staff are commended for the high number of inspections and compliance reviews associated with field activities to determine an accurate Class II well inventory.

FY2001 WORKPLAN NEGOTIATIONS:

Quality Assurance Annual Update - It is a regulatory requirement that all environmental programs conducted on behalf of EPA will establish and implement effective Quality Systems. The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) must be updated annually. If both the QMP and QAPP are current and valid, EPA requires each state to annually certify that both plans are current by submitting updated signatory pages and organizational charts as applicable.

FY2001 UIC Target Allocation - The FY2001 OCC UIC target is \$343,300.

FY2001 Target for total MIT's: EPA and OCC UIC staff agree that the target of mechanical

integrity tests (MITs) for the FY2001 grant workplan should be reduced to 3,000 based upon an expected reduction in active Class II injection wells. The inventory reduction results from OCC actions removing authority from almost 600 orphaned injection wells. OCC expects the number of vacated orders to double during FY2000, with an active inventory of approximately 15,000 wells.

FY2001 Target for Complaint-related Inspections: OCC committed to address all citizen complaints received. The target for FY2000 is much larger than the number of complaints received. The negotiated target for FY2001 allows OCC to report the actual number of UIC complaints and the number/percentage that receive field inspections.

Combining of SNC Violation Summary and UIC Violation Summary in FY2001: To streamline the submission of these documents, OCC agreed to combine the Significant Non-Compliance (SNC) and UIC Violation Summaries (Tasks 620 and 610) into one document. OCC staff agreed to submit the violation summary as an attachment to the required quarterly reports, EPA 7520 forms.

FY99 PROGRAM ISSUES:

Annual UIC Inventory Accuracy—During OCC's FY99 initiative to determine the accuracy of Oklahoma's Class II injection well inventory, OCC field inspectors attempted to verify the status of every active injection well in the electronic data base. During the first quarter of calendar year 2000, OCC vacated numerous UIC orders (permits) covering over 500 orphaned injection wells for non-compliance with UIC reporting and mechanical integrity test (MIT) requirements. OCC anticipates removing UIC authority for all permitted injection wells that are no longer being used as injection wells (permanently abandoned).

Although OCC requires some form of financial surety for all injection and oil and gas wells, the surety has either expired or is not sufficient for plugging these orphaned wells. In most cases, OCC has been unsuccessful in locating the operator responsible for plugging these orphaned/abandoned injection wells because the operator of record is either out of business or cannot be found. This fiscal year, OCC staff anticipate vacating the authorization of at least 1,000 abandoned injection wells for which no responsible operator can be found. Some of these wells obtained permits after EPA's authorization of the State's UIC primacy program in 1981.

The identification of these orphaned/abandoned injection wells may account for some of the discrepancy between the reported annual Class II well inventory and 5-year MIT values since 1991. The reported number of injection wells in Oklahoma has decreased to 15,610 in December 1999, down approximately 6,000 wells since 1996. To assure that these former injection wells do not act as pathways for fluid migration into underground sources of drinking water (USDWs), the State UIC program should track all former injection wells until plugged. Correspondingly, the State program should also report the cumulative number of unplugged orphaned/abandoned injection wells as abandoned on the annual UIC inventory report. OCC anticipates plugging these wells with available state funds.

OCC rules allow for temporarily abandonment of wells at OAC 165:10-11-9. By

reporting these wells as abandoned, unplugged former injectors are identified in the UIC annual inventory and the State program is credited with those tracking efforts. The number of unplugged injection wells (active and temporarily abandoned) are also included in EPA's annual grant funding calculations. Annually on EPA forms 7520, the State program should also report the number of former injection wells plugged. The cumulative number of plugged injection wells is also a data field in OCC's annual UIC inventory report to EPA.

Since 1996, the cumulative number of plugged UIC wells in Oklahoma has decreased instead of increased. The number of plugged UIC wells reported in the 2000 Class II well inventory should represent the cumulative historical number of abandoned injection wells that have been adequately plugged with cement since primacy. As previously mentioned, the cumulative number of former injection wells that have not been adequately plugged with cement should also be reported in the State's annual UIC inventory. The only category currently available for these wells is temporarily abandoned.

Operator Financial Assurance—An integral part of any UIC program is the operator's responsibility to operate an injection well to prevent any contamination of underground drinking water resources, including proper closure. OCC requires operators of all injection and oil and gas wells to file evidence of financial ability to comply with site remediation requirements, including plugging [OAC 165:10-1-10]. The type of surety is usually determined by OCC based upon the compliance record and plugging responsibilities of the operator. Type A surety is simply a verified financial statement showing an operator's net worth of at least \$50,000, while Type B surety includes "an irrevocable commercial letter of credit, cash, a cashier's check, a certificate of deposit, bank joint custody receipt, other approved negotiable instrument, or a blanket surety bond." Generally, Type B surety does not exceed \$25,000 unless otherwise ordered by the Commission; the Director of OCC's Oil and Gas Division can also use "Director's discretion" to set a higher amount. EPA is not aware of any State regulation or statute that waives the financial surety requirement for injection wells.

Adequate tracking and closure of a large number of orphaned/abandoned injection wells that have lost UIC authorization was discussed during the mid-year evaluation. OCC UIC staff indicated that the operators of record for the 500-plus injection wells that lost UIC authority in the first quarter of 2000 (because of operator non-compliance) were either no longer in business or could not be found. Even though compliance with the surety requirement is mandatory for any person drilling or operating any well in Oklahoma [OAC 165:10-1-10(f)], the surety for all wells in Oklahoma (production and injection) appears inadequate to cause the plugging of wells when the responsible operator is no longer in business. Therefore, the State UIC program has no recourse for plugging these wells except to use available State and Federal funds.

Orphaned wells in Oklahoma is not a new issue. Literally thousands of unplugged oil and gas wells currently exist in the state. Currently, in conjunction with the Oklahoma Energy Resources Board and EPA, OCC is overseeing the plugging of hundreds of abandoned wells in the Lake Oologah area using Federal dollars from the Oil Spill Contingency Liability Trust Fund administered by the U.S. Coast Guard. This effort will address only a fraction of the abandoned wells that threaten to contaminate USDWs. Generally, all orphaned/abandoned injection wells for which orders are vacated for non-compliance with reporting and mechanical integrity

requirements (or any other reason) must either be plugged by a responsible operator or plugged by the State program with surety funds. Financial assurance is necessary to assure former injection wells are adequately plugged to prevent contamination of USDWs, the protection standard of all UIC programs.

Any effective UIC program requires an injection well operator to demonstrate financial surety to plug former injection wells. Although OCC regulations and Oklahoma's UIC primacy program requires Class II well operators to provide for financial surety, OCC's surety program appears ineffective. Instead of placing the plugging burden on the well operator directly, or indirectly by utilizing funds from adequate closure bonds, the State program generally plugs orphaned wells using available State funds because of irresponsible operators and inadequate financial assurance.

Historically, the State "Plugging Fund" appears insufficient to plug the large number of orphaned oil and gas wells, including abandoned injection wells. This action appears contrary to the Safe Drinking Water Act's UIC program which places the burden of protecting USDWs on the owner or operator of the injection well. OCC should make every effort to assure that abandoned injection wells are plugged timely and properly by the responsible operator. An effective surety program seems integral to that effort.

EPA staff also inquired if the State program investigated whether any of the abandoned injection wells mentioned above are located within the pressure influence of any active injection wells. OCC staff indicated that such investigation was not performed prior to vacating the orders. The only evaluation is the standard area of review procedures performed in the initial UIC permitting process. In order to prevent these abandoned injection wells from becoming pathways for fluid migration into an underground source of drinking water, the State program should also evaluate the impact of any presently authorized injection activities on these unplugged former injection wells. Once identified, the operator of the active injection operation is responsible for any corrective action, i.e., plugging the abandoned well, within the pressure influence of the injection activity.

Annual Reporting by Well Operators—All Class II UIC programs require operators to submit information each year on the history of their injection operations, i.e., total volumes of injected fluids and actual injection pressures/rates for each month. OCC requires operators of non-commercial injection wells to report these required values for each calendar year using OCC's Form 1012, due on or before April 1st every year [OAC 165:10-5-7(b)(1)(A)]. Operators of commercial injection wells are required to report Form 1012 every February 28th and August 31st for the previous 6 month period [OAC 165:10-5-7(b)(1)(B)]. The low percentage of operator compliance with this requirement was cited as a program deficiency in the Region's 1998 Primacy program review.

During the mid-year evaluation conference, OCC staff reported collecting Forms 1012 for about 9,000 Class II injection wells, nearly 60% of OCC's reported well inventory for 1999. At minimum, EPA expects greater than 95% compliance with this requirement. Even though OCC has increased its enforcement efforts in collecting delinquent annual monitoring reports,

the State program should expand enforcement actions associated with operator non-compliance with OAC 165:10-5-7. Region 6 oversight staff monitors the effectiveness of the State program's enforcement efforts through OCC's quarterly violation summaries submitted as a deliverable through the UIC grant workplan. However, the State program is historically delinquent in submitting the violation summaries as required in the UIC grant workplan.

Mechanical Integrity - EPA staff reviewed 291 mechanical integrity test (MIT) reports (OCC Form 1075 dated between 1997 to present) to ensure injection activities are not contaminating USDWs. Three counties were randomly selected, and all of the filed 1075s in those files were reviewed (see Table 3). The MITs mainly consisted of annular pressure tests (MIT Part 1), designed to identify any significant leaks in the tubing, casing, or packer. Some of the tests involved radioactive tracer surveys (RATs), but no specific RAT logs were reviewed at this time. Generally, most of the following data fields were not completed in the reviewed Form 1075 reports:

- ▶ date of permit (order)
- ▶ surface casing pressure before test
- ▶ maximum pressure per OCC order
- ▶ packer depth per OCC order
- ▶ actual packer depth
- ▶ flow-back volume (gallons)

The witnessing OCC field inspector did not sign some of the reviewed reports. An inspector's signature indicates the test was actually witnessed by a UIC program representative. Also, values for both the beginning and ending annulus pressure measurements were not apparent in all reports. Since OCC's Form 1075 does not include a data field for the duration of the test, none of the reviewed reports recorded the duration of the MITs. Typically, MITs are conducted over a continuous 30-minute time span.

Table 3. Reviewed MITs during FY00 mid-year evaluation (MITs from 1997 to present).

County	Carter	Noble	Washington	Total
MITs Reviewed	107	97	87	291
Number of Failures	3	11	0	14
# NOT retested	0	4	0	4
Operator Transfers	2	3	0	6
Orders Terminated	0	3	0	3
Forms with Errors	4	3	0	7

Of the three counties reviewed, Noble County had the highest percentage of MIT failure, 11 percent, while no failures were found in the reviewed MITs for Washington County. Of the 11 wells that failed MITs, three were later transferred to another operator after passing a subsequent MIT and three others lost UIC authority after the orders were terminated (two were returned to production and the other remained unplugged). According to OCC's electronic data

base, 4 other wells have not been re-tested since failing MITs between April and November 1999. EPA will continue to monitor compliance with MIT requirements during future oversight evaluations.

Brine Injection and SDWA Sec. 1422 Authority—The Oklahoma legislature considered proposed amendments to the Brine Development and the Environmental Quality Acts designed to resolve jurisdictional discrepancies between OCC and ODEQ UIC authorities. If finalized, the statutory changes will give OCC authority over two specific types of Class V injection wells. If these proposed statutory changes become State law, they will be submitted as part of the state's anticipated UIC Primacy program revision for Class I, III, IV and V injection activities previously authorized under Section 1422 of the Safe Drinking Water Act (SDWA).

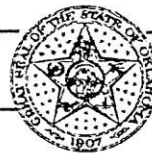
Draft Section 1425 Program Revision—In December 1998, OCC submitted a draft program revision, pursuant to item C.1 of the 1998 Agreement, for Oklahoma's Class II UIC primacy program authorized under SDWA Section 1425. Although the Region anticipated providing OCC with comments on the draft revision package before July 1, 2000, more time is needed to provide an adequate response on several problematic issues. The Region expects some major program implementation issues identified in the Region's 1998 Primacy program review will be ultimately resolved through the program revision process. Any remaining problematic issues will be resolved through EPA's continuing oversight of the State UIC Primacy program.

OKLAHOMA
CORPORATION COMMISSION

P.O. BOX 52000-2000
OKLAHOMA CITY, OKLAHOMA 73152-2000

255 Jim Thorpe Building
Telephone: (405) 521-2500
FAX: (405) 522-0757

OIL & GAS CONSERVATION DIVISION



POLLUTION ABATEMENT
Underground Injection Control

October 2, 2000

Mr. Oscar Ramirez, Jr.
Acting Director
Water Quality Protection Division
United States Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 73142-2000

Re: Oklahoma Corporation
Commission UIC Annual
Reporting Project

Dear Mr. Ramirez

In your letter of July 27th, 2000 you requested that a list be prepared of operators who have failed to report under the annual reporting requirements of the UIC program. You asked that this report be made available to EPA representatives at our annual end of the year meeting. The purpose of this letter is to memorialize the events of the annual end of the year meeting and to establish an appropriate plan of action at this time.

On September 20th, 2000 Commission staff met with Larry Wright, Phil Dellinger, Mike Vaughn, and Mike Frazier to discuss the status of the UIC annual reporting project as well as our end of the year evaluation of the Class II well UIC program. Since the date of your July letter, up until the date of the Sept. meeting, staff designed a "final notice" letter program that was forwarded to the vast majority of operators still remaining in noncompliance with UIC reporting requirements. Response to the final notice letter was better than expected. At the date of the meeting, the UIC staff was able to bring the compliance rate from an estimated 75% to over 92% with over 500 reports yet to be entered into the database. More reports are coming in daily, and staff will send notices to the remaining operators out of compliance.

Most of the operators yet to be notified are single well operators and a large number of operators shown out of compliance were found to be out of business, therefore the percentage of operators out of compliance was not as high as originally estimated.

It was estimated that staff could reach closure on the remaining operators out of compliance within the next 90 days. Due to OCC staff's success in gaining compliance over the past two months EPA thought it would be appropriate to allow OCC staff the additional 90 days to complete the project. If at the end of the 90 days, the UIC Dept. has not made significant progress in completing this project, EPA would then request a new listing of operators out of compliance and could initiate a notice of violation program at that time.

If this acceptable staff will proceed with the expectation of a status report to EPA within the 90 days, which would be December 21st, 2000. If this is not acceptable or you would like additional information please notify this office as soon as possible.

If you have any questions, please feel free to contact me at 405-521-2302 or Tim Baker at 405-522-2763, or Rod Davari at 405-522-2751.

Sincerely



Mike Battles

Director Oil and Gas Conservation Division

Xc. Larry Wright

Phil Dellinger

Mike Frazier

Mike Vaughn

Tim Baker

Mike Decker

Rod Davari
